МИНИСТЕРСТВО ЗДРАВООХРАНЕНИЯ И СОЦИАЛЬНОГО РАЗВИТИЯ
РОССИЙСКОЙ ФЕДЕРАЦИИ
КАЗАНСКИЙ ГОСУДАРСТВЕННЫЙ МЕДИЦИНСКИЙ УНИВЕРСИТЕТ
КАФЕДРА ПРОПЕДЕВТИКИ ВНУТРЕННИХ БОЛЕЗНЕЙ

Общий уход за больным

Учебно-методическое пособие

Часть 1

General Care of a Patient

Manual

Part 1

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Авторы-составители
заведующий кафедрой пропедевтики внутренних болезней профессор В.Н.Ослопов, доц. О.В.Богоявленская, асс. Л.Ч.Самерханова, асс. М.А.Макаров, доц. А.Р.Садыкова, ст. преп. кафедры иностранных языков Л.А.Ануфриева, ст. преп. кафедры иностранных языков И.В.Карамышева

Рецензенты:
декан отделения по работе с иностранными студентами,
к.м.н., доцент кафедры эпидемиологии
Н.М.Хакимов

директор Центра практических умений,
д.м.н., доцент кафедры общей хирургии
С.А.Булатов

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CONTENT

«The doctor treats diseases,
but the nature cures»
Hippocrates

UNIT 1
Theme 1. IMPORTANCE OF GENERAL CARE OF A PATIENT

Goal: to get a notion about the job of a nurse, the importance of patient's care, legislative bases of health protection.

Knowledge objectives:

- to know the history of profession of a nurse, qualification requirements to a profession of a nurse, her official duties, a role of the general care of a patient as a medical factor, rules of behavior in a clinic, in a hospital.

Subject-matter:

1) a history of the profession of a nurse;
2) importance of care of a patient as a medical factor;
3) relations between medical staff and patients;
4) moral code and norms of behavior of a nurse; the role of a nurse, her official duties;
5) legislative bases of health protection.

EDUCATIONAL MATERIAL

« If with the help of correct care to remove all the conditions aggravating disease, it will take its natural course while collateral, artificial factors caused by people's mistakes, thoughtlessness or ignorance will be eliminated»
Florence Nightingale

The importance of the patient's care is great. A nurse should strictly follow the doctors instructions, carry out all the actions promoting preservation and recovery of patient's health, relieve his sufferings, thoroughly watch the functioning of all the organs, prevent possible complications, approach tactfully to a patient. Only then the

recovery of patients with different degree of severity and with various diseases is possible.

History of the organization of the system of nurse training

The work of a medical nurse has a century-old history. Hippocrates had much to say about what is now called nursing. The first and best known of his Aphorisms is the following: "Life is short, and Art is long; occasion is fleeting; experience is fallacious, and judgement is difficult. A physician must not only be prepared to do what is right himself, but must also make a patient, attendants, and externals co-operate". In the Middle Ages several religious orders provided and staffed hospitals. Such organizations included both help to a patient and control of epidemics. The Order of Saint Lazar patronized the leprotics, the Order of Saint Ioan had in charge Jerusalem patients in 1099. The basic care of such organizations included both help to a patient and control of epidemics. In the XIV c. there appeared religious associations of women nursing the patients. In the XVII c. charitable societies came into being and the term «nurse» (the sister of mercy) appeared.

In Russia the alms-houses, called to render the charitable medical help, opened at monasteries, «hospital wards» being created there. People began to call a place where *the pain* (Russian «боль» – [bol']) stacks a person *«down»* (Russian «ниц» - [nitz]) as *a hospital* (Russian «больница» - [bol'nitza]). In Russia women began to take care of the sick and wounded under Peter the First (1672-1724). Under emperor Paul the First (1754-1801) the Widow houses were created, where compassionate widows gratuitously took care of patients in free-of-charge hospitals for the poor. The first Russian community of nurses appeared in 1844 on the initiative of Nikolay the First daughter, the great princess Alexandra Nikolaevna in Saint Petersburg. In 1854 during the Crimean war (1853 - 1856) under the guidance of the great princess Elena Pavlovna, who organized the help to the wounded at a battle-field, Khrestovozdvijenskaya community of nurses was set up. And it is 'Dasha Sevastopolskaya' whose name is closely connected with the modern nursing era in Russia. Using her own intuition, she set up a care plan for each wounded man. Thus the first dressing station was organised in the Crimean War. The brilliant Russian surgeon professor

Nickolay Pirogov, who took part in the Crimean War, asked Dasha to assist him during surgeries. She worked side by side with him.

The outstanding Russian surgeon N.I.Pirogov worked out community regulations and special instructions for nurses who were divided into groups (dressing, watching, pharmaceutical and auxiliary nurses). He worked out the principles of sorting the wounded and the sick to improve the medical aid. Therefore it's N.I.Pirogov who is justly considered to be the first organizer of the nurse service in Russia.

The term «a nurse care» was offered by the legendary Florence Nightingale in 1859, and in 1865 this term was accepted by the International Committee of the Red Cross. Florence Nightingale set up a military hospital in November 1854 (the Crimean war). She instilled strict order in hospitals, rational feeding of the wounded, organized teaching for nurses and assisted herself at operations. After the war Florence Nightingale presented to the Queen Victoria the developed plan of a hospital-services reformation and established the school at St. Thomas's Hospital, London, which became the model for schools of nursing everywhere.

In the 20th century, laws have been passed in nearly all countries to regulate the training and registration of nurses. In Russia nurse training is carried out in medical schools and colleges. Quality of medical aid to the population depends on the training of medical staff. It also concerns the students of medical universities. Insufficient preparation for lessons and bad knowledge of various sections of the general care can result in mistakes in their further work as doctors.

Importance of patient's care

Importance of care of the patient is difficult to overestimate. Exact performance of doctor's instructions, carrying out all the actions promoting preservation and recovery of patient's health, relieving his sufferings, thorough watching all the organs functioning, prevention of probable complications, tactful approach to a patient - all this contains the concept of care of a patient. And if the doctor treats a patient, the nurse pulls him through.

Precise performance of doctor's instructions, strict observance of dietary, water hygienic regimes, favourable physical and psychological

conditions are capable to improve health even incurable patients. And, on the contrary, bad care, the negligent attitude of a nurse to her direct duties can not only detain recovery of a patient but also aggravate the severity of his condition.

In daily life care of a patient means rendering the help in various needs: in meal, drink, toilet, movement, physiological necessity etc. The care also means creation of the optimum conditions both in medical institution and at home: silence and rest, comfortable bed, clean linen, fresh air etc. Such care is usually carried out by attendants and relatives of a patient.

In medicine the concept «the care of a patient» is treated more widely. It is detached into independent discipline and represents the whole system of measures including correct and timely fulfilment of various medical prescriptions, carrying out diagnostics, preparation of the patient for the necessary examinations, observation of the patient condition, rendering the first pre-medical help, conducting of the necessary medical documentation.

Quite often the success of treatment is entirely determined by quality of care. For example, it is possible to perform a complicated operation and to achieve a significant recovery of the disordered extremity functions after stroke or fracture, but then «to lose» a patient because of congestive or inflammatory processes in the lungs as a result of long immobility, bedsores caused by bad care.

Therefore the care of a patient is an obligatory component of treatment influencing on the course of the disease and recovery of a patient.

Relations between medical staff and patients.
Moral code and norms of behaviour of a nurse

Certain norms of ethics and morals are inherent to medicine. The term «ethics» (Greek "ethice" - study of morals and morality) was first offered by the ancient Greek philosopher Aristotle, identifying it with a notion about human morals and ethics. The synonym to the term «medical ethics» is a notion «medical deontology» (Greek "deontos" - duty, "logos" - teaching), introduced by the English philosopher I. Bentam in the XVIII century.

Medical ethics covers a wide range of problems: these are various

questions of mutual relation of the doctor and the patient, the doctor and relatives of a patient, medical workers among themselves.

Deontological problems increase in connection with wide introduction of results of scientific and technical progress into practical medicine. Education of students in a higher medical school requires the observance of some ethical standards. More detailed acquaintance with various aspects of medical ethics students get on the senior courses.

The principal questions of medical ethics are mutual relations between a doctor and a patient. In many respects a sick man qualitatively differs from a healthy person. Condition of a person during stress, emotional experience, hope or disbelief in recovery creates a special atmosphere of relations between a medical worker and a patient.

From medical workers, be it a nurse, an attendant or a medical student such human qualities as tactful approach, sympathy, kindness, cordiality, care and attention are required. The listed personal qualities of medical workers, who take care of patients, should be supported with education and high professionalism.

Deontology principles foresee the fulfilment of concrete requirements to general appearance of a medical worker: it is necessary to use replaceable footwear, the gown should be clean and ironed, nails - shortly cut, hair - filled under a cap.

The care also assumes the observation of certain rules of contact with a patient. It is important to give the patient a maximum of attention, to calm him down, to explain the necessity of following a regime and taking medicines regularly, and to convince of an opportunity of recovery or improvement of condition. It is necessary to observe caution while speaking with the patients, especially with those suffering from oncological diseases; it is not used to let them know their true diagnosis. Nowadays the statement of the great doctor of the antiquity, «the father of medicine» Hippocrates is actual as ever: «Surround the patient with love and a reasonable consolation, but leave him ignorant to what threatens him». Nevertheless in some countries the patient is informed on gravity of the disease and possible lethal outcome, originating from social and economic reasons. Thus, in the USA the patient has even the right to make a proceeding against the doctor who had concealed the diagnosis of cancer from him.

Violation of deontological principles of contact with patients can

cause the development of *iatrogenic diseases* (Greek “jatros” - doctor, “gennao” - bear, cause). Iatrogenic disease is a pathological state of a patient caused by careless statements or acts of the doctor or other medical worker which create in a person a feeling of the presence of some disease or special severity of the disease. Inadequate, harmful verbal contacts are injurious to the patient and can cause various psychogenic iatrogeny. However 300 years ago «the English Hippocrates» T. Sidenhem accentuated the danger to the patient not only because of the actions of a medical worker, injuring a patient’s mentality, but also due to undesirable consequences of medical manipulations. Nowadays any diseases which occur because of the actions of medical workers are considered to be iatrogenic. Besides the psychogenic iatrogeny *(iatropsychogeny)* there is *iatropharmacogeny* (consequence of medicamental influence on the patient - for example, after-effects of drugs), *manipulation iatrogeny* (unfavorable influence on the patient during his examination - for example, complications in coronaroangiography), *combined iatrogeny* (consequences of the influence of several factors) and the so-called «*dumb*» *iatrogeny* (consequence of inactivity of medical workers).

The necessity to keep a medical secret can also be referred to the deontological problems of care. Medical workers have no right to divulge any information about the patient’s personal life. But this requirement does not refer to the situations that may cause danger to other people (infectious, sexually transmitted diseases (STD or venereal diseases), acquired immune-deficiency syndrome (AIDS), poisonings etc.). In these cases medical workers are obliged to inform the appropriate organizations on the received data immediately. With the purpose of realization sanitation and epidemiologic actions in the focus at revealing pediculosis, an infectious disease or food poisoning the nurse is obliged to inform the Sanitation and Epidemiologic Centre by the phone during 12 hours from the moment of making the diagnosis and simultaneously send there the filled form of the emergency notice (the form «058/y»).

The role of a nurse, her official duties

The term «a care of the patient» is comparable with foreign definition «nursing» - «the content of nursing consists in a care of a

man» (WHO[1], 1987).

Till now there is no common formulation to «nursing». Classical definition was given in 1961 by an American nurse, the teacher and an outstanding educator Virginia Henderson: *«Nursing is to render assistance to a person, sick or healthy, to carry out the actions relating to his health, recovery or quiet death which he would undertake himself, having necessary strength, knowledge and will»*. In 1987 at the meeting of national representatives of the International Council of nurses the following definition was formulated: *«Nursing is a component of health system which includes activity on strengthening health, prevention of diseases, granting psychosocial help and care of persons who have physical and mental diseases, as well as to the disabled of all age groups. Such help is realized by nurses both in medical and in any other establishments, at home and everywhere, where there is a need in it»* (New Zealand, 1987). In 1993 at the first all-Russia scientific-practical conference on the theory of nursing the following definition of nursing in Russia was accepted: *«Nursing as a part of the system of public health services, is a science and art aimed at the solution of existing and potential health problems in varying environmental conditions»*.

The nurse is a specialist with a secondary medical education. The nurse carries out medical prescriptions and nursing. According to the WHO the essence of nursing exactly consists in taking care of patients.

Duties of nurses depend on the type and structure of the medical institution where she works, her post and character of work.

There are the following posts of nurses: head nurse, senior nurse, ward nurse, procedural nurse, scrub nurse, district nurse, nurses working with doctors of particular specialties (oculists, otorhinolaryngologists, neuropathologists etc.) and dietary nurse.

The head nurse is a specialist with higher medical education, graduating from the department of higher nursing education of the medical university (at Kazan Medical University it is a faculty of management and higher nursing education). She is engaged in questions of the rational organization of work, improvement of professional skills of the medical personnel and carries out the control of its work.

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[1] World Health Organization

The senior nurse assists the head of the department of hospital (polyclinic) in administrative and economic work, organizes and supervises the work of ward nurses and the junior medical personnel.

The ward nurse carries out doctor's prescriptions in the wards allotted to her, observes the state of patients' health, takes care of them and organizes their feeding.

The procedural nurse carries out doctor's prescriptions (intravenous injections and infusions), helps to perform manipulations which only doctor has a right to do, takes venous blood for laboratory tests.

The scrub nurse assists a surgeon in surgical operations, prepares surgical instruments, suture and dressing material, linen.

The district nurse helps a district doctor to see the patients living in a district, carries out the doctor's prescriptions at home and participates in realization of preventive measures.

The dietary nurse under the guidance of dietician is responsible for the organization and quality of dietetic therapy, makes a menu. She supervises culinary processing, distribution of food and sanitary condition of kitchen and dining room for patients.

Despite the certain division of duties of nurses, there is a range of duties accepted for nursing personnel as a whole:

1) carrying out medical prescriptions (injections, distribution of drugs, putting on mustard plasters, enemas and so on);

2) realization of nursing process, including:

- nurse inspection (initial examination of a patient, taking patient's temperature and blood pressure, counting the frequency of breath and feeling the pulse, control of diurnal urine excretion, etc.);

- correct taking of material for laboratory tests (blood, sputum, urine, feces);

- maintenance of patients' care (care of skin, eyes, ears, oral cavity; control of changing of bed linen and underwear; organization of correct and timely feeding of patients);

3) rendering the first aid;

4) maintenance of transportation of patients;

5) admission of patients and organization of discharge;

6) control of a sanitary condition of the departments;

7) control of keeping to the established hospital order and performance of personal hygiene rules by patients;

8) conducting of the medical documentation.

To *the junior medical staff* there refer auxiliary nurse (host-nurse), junior nurses and attendants.

The *junior nurse* (takes care of patients) helps the ward nurse to take care of the patients, changes linen, provides cleanliness and neatness of patients and hospital rooms, participates in the transportation of patients, looks after the patients to observe the hospital regime.

The *auxiliary nurse* is engaged in economic questions, receives and gives out linen, washing-up liquids and clearing stock and directly supervises the work of attendants.

The range of duties of *attendants* is determined by their category (department attendant, barmaid attendant, the maid attendant etc.).

The general duties for the junior medical staff:

1) regular damp cleaning of rooms (wards, corridors, general use places etc.),

2) rendering assistance to the nurse to take care of patients (change of linen, feeding of critically diseased patients, hygienic maintenance of physiological needs of critically diseased patients - giving, cleaning and washing bedpans and urinals, etc.),

3) cleansing the patients,

4) attending patients for diagnostic and medical procedures,

5) transportation of patients.

Legislative bases of health protection of citizens of Russia

During the process of taking care of patients some mistakes can be made by medical staff because of errors, insufficient experience or due to rare forms of a disease. Any medical worker, observing moral and ethical standards, should not only know and carry out his duties but also have the notion about the responsibility which he takes for evasion or nonprofessional performance of the duties.

In the activity of medical staff there can be both mistakes and medical offences. In medical practice it is necessary to separate mistakes from *the medical offences* connected with the improper attitude to the

professional duties.

Such an offence is wrong introduction of drugs especially drastic ones that can lead to tragical consequences.

The administrative responsibility is carried by medical workers for the violation of storage rules and registration of poisonous, drastic and narcotics (clause 44, Code of administrative offences of the Russian Federation). Not rendering help to a patient without valid reason also refers to medical offences (clause 124, Criminal Code of the Russian Federation).

Depending on a severity of offences a medical worker is subjected to administrative penalties (reprimand, strict reprimand, transferring to less paid work etc.) or is made answerable according to the legislation. Thus, the care of patients assumes the legal responsibility of medical workers, precise performance of the official duties and observance of principles of medical deontology.

CONTROL QUESTIONS

1. What does the general care of a patient foresee?
2. Who should take care of a patient?
3. What does medical deontology study?
4. What is the role of a word in treatment of a patient?
5. What is an iatrogenic disease?
6. What is a legal responsibility of a medical worker?

UNIT 1
Theme 2. BASIC TYPES OF MEDICAL INSTITUTIONS

Goal: to get notion about treatment-and-preventive institutions, about in-patient and out-patient medical aid.

Knowledge objective:

- to know the kinds of medical aid rendered by medical institutions of various type.

Subject-matter:

1) the basic types of the treatment-and-preventive institutions rendering out-patient aid,

2) the basic types of the treatment-and-preventive institutions

rendering in-patient medical aid.

EDUCATIONAL MATERIAL

«Do you know, what I always think about, looking at lines of windows in our house? I think about a chance to change all this for a hospital, and how to place beds for the patients there»
F.Nightingale

The basic types of medico-prophylactic institutions, rendering out-patient medical aid

Medical aid to the population of Russia is provided with various types of treatment-and-preventive institutions and can be out-patient, hospital, sanatorium, ambulant and emergency.

Medical aid is rendered both at a place of permanent residence (polyclinics, hospitals) and at a place of work (medical institutions of the enterprises). Polyclinics, polyclinic departments of clinics, out-patient stations, medico-sanitary parts and infirmaries, ambulance stations and female consultation service carry out the out-patient help in cities.

An out-patient clinic (Latin "ambulatorius" – mobile) is a treatment-and-preventive institution rendering out-patient medical aid to the population of a small settlement of the city type, a small industrial enterprise or countryside. In countryside the out-patient help can be rendered by a nursing and midwife station. Reception of patients in an out-patient clinic is carried out only on the basic specialities (a physician, a surgeon, a dentist, a gynaecologist etc.). The district principle of work allows to reveal the sick, to render the qualified help to them, to study the disease incidence, to carry out preventive and sanitary - educational work. The out-patient clinic differs from a polyclinic (see below) in less number of experts and in the volume of activity.

At large industrial enterprises medical aid is rendered by medico-sanitary units which can include a hospital, an out-patient department, an infirmary and a dispensary.

To make medical aid for workers more available the infirmaries,

included into the structure of the industrial enterprise or medico-sanitary unit, are organized at industrial enterprises. The doctor's infirmary is headed by a doctor, a nursery infirmary - by a doctor's assistant or a nurse.

An infirmary is a division of a medico-sanitary unit or a polyclinic, organized at industrial enterprises, buildings, at high and secondary educational institutions, schools. Along with rendering the first medical aid in traumas, sudden diseases and professional poisonings the infirmary carries out systematic sanitary and hygienic and treatment-preventive actions to prevent and decrease the disease incidence.

Polyclinic (Greek "polis" - city, "klinike" - art of treating) - the multiprofile treatment-and-preventive institution in which the medical aid, including specialized one, is rendered to visiting patients and also to patients at home. Complex of treatment-and-prophylactic measures to treat and prevent diseases and their complications is carried out as well. The polyclinic is an independent treatment-and-prophylactic institution of a city type or a part of a medico-sanitary unit or the incorporated hospital. In a polyclinic reception of patients by doctors of all specialities is carried out. There are laboratory, diagnostic and medical consulting rooms. Patients who can't come to a polyclinic, call a doctor home where they get the qualified help, and in case of necessity are hospitalized. The polyclinic reveals the sick, renders assistance, examines disease incidence, and carries out routine inspections.

There are also *rooms of pre-medical reception* in polyclinics where a nurse takes a patient's temperature and measures his arterial pressure.

Out-patient - polyclinic institution carries out also prophylactic medical examination, i.e. active medical supervision of a certain contingent of the population.

Dispensary (Latin "dispenso" - to distribute) – is a specialized treatment-and-prophylactic institution working on a dispensary method. Dispensary serves the patients with certain groups of diseases: cardiological, oncological, psychoneurological, endocrinological, dermatovenereal etc. Along with treatment and prevention dispensary carries out home nursing of patients - active regular visiting at-home, sanitary-educational work, performance of medical prescriptions.

Specialized diagnostic and consultation centers are being created now on the basis of large versatile hospitals, clinics, medical academies, medical universities and research institutes ensuring highly skilled out-patient examination and in-patient treatment.

Female dispensary is a treatment-and-prophylactic institution in which treatment, prevention of gynaecological diseases and supervision of the pregnant women is carried out. The midwife assists the doctor at reception of patients, conducts home nursing of the pregnant, trains them to care for the newborn and personal hygiene. She carries out both prescriptions of the doctor and sanitary - educational work.

Ambulance stations (or stations of emergency aid) provide medical aid in emergency cases, working round the clock (24 hours). The medical assistant going on calls, rendering first aid and hospitalizing a patient can be at the head of the team. Specialized medical aid demanding high qualification is given by the team headed by the doctor, while a medical assistant helps him to render assistance and transport a patient. Many ambulance stations have special cars with the modern equipment that allows to render the emergency help and to carry out resuscitation actions on the way to a hospital.

The basic types of treatment-and-preventive institutions, rendering in-patient medical aid

Stationary (Latin "stationarius" - motionless) medical aid is rendered to a patient requiring regular supervision, complex methods of examination and treatment are necessary. There are several kinds of stationary institutions.

Hospital is a treatment-and-preventive institution that provides highly skilled service to the population on the basis of the achievements of modern medical science and engineering. A city hospital can be versatile for the treatment of patients with various diseases and can be specialized for the treatment of certain diseases (tuberculosis, infections, mental diseases etc.). The regional or republican hospital provides the rural population with the highly skilled specialized polyclinic and stationary medical aid.

The clinic is a hospital institution where both hospitalization of patients and research work and education of students, doctors and the secondary medical staff are carried out.

Military hospital is a hospital for the treatment of military men and invalids of war.

Sanatorium (Latin "sanatum" - to treat, to cure) is a stationary institution where rehabilitation of patients is carried out. Sanatoria are usually situated in a place (health resorts) with favourable climate where there are mineral waters and medical mud.

CONTROL QUESTIONS

1. What types of medical institutions exist in Russia?
2. What medical institutions render out-patient help?
3. What are the principles of work in an out-patient clinic and an infirmary?
4. What treatment-and-preventive help is rendered by a polyclinic?
5. What work is carried out by dispensaries and diagnostic and consultation clinics?
6. What work is carried out by female consultation service and ambulance stations?
7. What medical institutions render the in-patient help?
8. Tell about the work of the institutions rendering in-patient medical aid.

UNIT 1
Theme 3. RECEPTION and HOSPITALIZATION of PATIENTS

Goal: to get a notion about the rules of the emergency department (admitting department, reception ward) and hospitalization of patients at medical institution, about the structure of the emergency department, sanitary-and-epidemiologic regimens of emergency department; to master skills.

Knowledge objectives:

- to know the arrangement and equipment of the emergency department, duties of a nurse and a junior nurse, the rules of reception and registration of patients, filling in passport data into a case history (medical card, record card), inspection of skin and hair covering,

disinsection of a patient in pediculosis detection, sanitization of patients (complete and partial);

Skill objectives:

- to develop practical skills in rendering hygienic baths, anthropometry (weighing a patient, measurement of height, measurement of the chest circle), transportation of a patient by a wheelchair and a stretcher.

Subject-matter:

1) an emergency department of the hospital;
2) reception and registration of patients;
3) sanitization of a patient at the emergency department;
4) the order of hospitalization, the basic methods and ways of transportation of patients to departments;
5) practical skills.

Equipment required: tables, a log-book of reception of patients, a case history, a statistical card, journal of refusals in hospitalization, medical weight-scale, height meter, a wheelchair, a wheel-stretcher, a stretcher.

EDUCATIONAL MATERIAL

"Hospital is a place of shelter where sick people are taken care of and where they can be admitted"
F.Nightingale

The emergency department is an important treatment and diagnostic department of a hospital. At the emergency department medical documentation (case history, registration book) is filled in; primary examination, anthropometry (from Greek: anthropos - a person, metreo - to measure) and sanitization of the admitted patients are carried out, in case of need the medical aid is rendered. Success of the subsequent treatment of a patient, and in urgent cases the life of a patient depend to a certain degree on how professionally, quickly and effectively the medical staff of this department operates.

The emergency department of a hospital

The emergency department is a part of a hospital intended for registration, reception, examination, sanitization of delivered patients and rendering the urgent medical aid. Every delivered patient should feel the careful and friendly attitude at the emergency department. Then he will trust the institution where he will be treated.

The emergency department consists of a waiting hall, registration room, rooms for patient's examination (one or several), a sanitary inspection room, a procedure room, a dressing room. Large hospitals have a small operating room, a casualty room, an X-ray room, a laboratory. The emergency department should include an isolator for patients with a suspected infectious disease.

The work of the emergency department is kept to a strict order*:* 1) registration of patients; 2) medical examination; 3) sanitization. Rooms should be placed in the same sequence.

The waiting hall is intended for patients who are not bedfast, and for relatives accompanying them. Table and many chairs should be here. The wall information board indicates the working hours of medical departments; doctor's consulting hours for relatives, the list of food parcels allowed for a patient. The *registration room is situated* nearby (here registration of admitted patients and registration of the necessary documentation are made. The inquiry office is also situated nearby.

In *a room for patients examination* a doctor examines a patient, makes an initial diagnosis, determines a kind of sanitization. Here thermometry, and sometimes other examinations (for example, electrocardiography) are carried out. If a patient is admitted in severe or unconscious condition, he is given an immediate help, without losing time for registration; all the necessary data are got later from a patient, relatives or persons accompanying him.

Procedure *room*, *dressing room*, and also *a small operating room* are intended for rendering the emergency aid.

For sanitization of patients admitted to a hospital, the emergency department has a *sanitary inspection room* (a bath, shower, a room for changing clothes etc.).

Reception and registration of patients

To the emergency department patients can be delivered:

1) by ambulance (in accidents, traumas, acute diseases and exacerbation of chronic diseases);

2) by the direction of a district doctor (in inefficient treatment in home conditions) – for planned hospitalization; before MSEC (medical social expertise commission) examination, and also by the direction of a military registration and enlistment office;

3) by transferring from other treatment-and-prophylactic establishments (under the arrangement with administration);

4) "by themselves" (the independent address for help of a patient in case of becoming worse in a street near a hospital).

A doctor of the emergency department examines a patient and decides on his hospitalization.

After that a nurse fills in the medical documentation.

A nurse takes a patient's temperature and writes down patient's personal data (surname, first name, date of a birth, home address), when and who delivered him, the diagnosis put by the directing institution, the initial diagnosis of the emergency department and the department a patient is directed to in "*The Log-book of reception of patients"* or *"The Registration book"* (form 001/u). She fills in the title page of t*he Case history of a patient* (form 003/u), the passport data and the left part of *the Statistical card of the discharged patient* (form 066/u).

If a patient is delivered to the emergency department in poor condition, then besides registration a nurse must render a patient the first pre-medical aid, urgently call a doctor and quickly fulfil all doctor's prescriptions.

If a patient is delivered to the emergency department from a street in an unconscious condition and without documents a nurse after a doctor's examination renders him emergency medical aid and fills in the necessary documents. After that she must give a telephone message to a police station and a bureau of accidents. In a telephone message patient's data (sex, approximate age, height and constitution) and a patient's clothes must also be noted. Before a patient's identification he should be registered as "unknown" in all the documents. In "The *Book*

of telephone messages" the text of the telephone message, date, time and a recipient of the message must be recorded.

A nurse must also give a telephone message to relatives and make the appropriate record in «*The Book of telephone messages*» in the following cases: a) a patient is delivered to a hospital because of a sudden disease occurred outside his home; b) a patient died at the emergency department.

When after examination and observation of a patient by a doctor there are no indications to hospitalization, a patient can go home. A nurse does a record *in « The Book of refusals in hospitalization »* (the same form with « *the Log-book of reception of patients*» 001/u) or in "The Registration book".

In case of necessity a nurse is obliged to call all experts necessary for the specification of the diagnosis (a surgeon, a gynaecologist etc.).

A nurse of the emergency department gives orders to the junior medical personnel and supervises their performance.

Duties of a junior nurse are:

1) supervision over sanitation;

2) attending a patient to a doctor's consulting room;

3) sanitization of a patient;

4) transportation and attending a patient to the specialized department.

Sanitization of a patient at the emergency department

It is carried out in a sanitary inspection room and includes:

1) disinsection;

2) hygienic bath, shower, sponging a patient;

3) changing patient's clothes to hospital ones.

There are two types of sanitization treatment of patients. In hospitals with a limited number of beds there is *a one-line system*, i.e. women and men are admitted by turns. In the *two-line system* sanitation treatment of men and women is carried out simultaneously.

The Sanitary inspection room usually consists of a room for a patient's examination, a cloak-room, a shower and bath room and a dressing room. Some of these rooms can be combined (for example, a room for a patient's examination and cloak-room).

In *a room* for patient's examination a patient is undressed, examined for pediculosis revealing and is sent for sanitization treatment. Here there are couches, tables, chairs, a wall thermometer (the air temperature in a room should be not lower than 25°C).

Before sanitization, a junior nurse of the emergency department should carefully examine the hairy parts of a patient's body for pediculosis revealing. In cases of pediculosis hair is washed with soap "K" and combed out with a special comb. On the title page of a case history a "P" (pediculosis) mark is made, and in 5-7 days the sanitary treatment is performed. In pediculosis revealing among men hair should be cut short (at the consent of a patient), wrapped up in a paper and burned. The clothes are preliminary treated with disinsectant and then sent to the disinfection room for the treatment. The bags with such clothes should be marked: "Pediculosis".

If a patient is supposed to have *an infectious disease* his clothes are subjected to chlorine or chloramine treatment for 2 hours and sent to a special laundry.

All the data concerning the sanitary treatment of an admitted patient are necessary to write down into a case history for a ward nurse to repeat the sanitary treatment in 5-7 days.

If the clothes are clean, they are put into a bag, and outdoor clothes are hung on a hanger and handed over to a check-room. The list of things (the reception receipt) is made in the duplicate: one duplicate is handed with things to a check-room, the other is stuck to a case history and during the discharge it is used to get a patient's things. All valuables and money are handed to the senior nurse to be kept in a safe, a receipt being given to a patient.

Then a patient accompanied by a nurse goes to a bath-room.

Bath-room. A bath should have wooden flooring. A bath is washed with a washcloth and a brush with soap and disinfectant, stains are washed off with a 3% hydrochloric acid solution and rinsed out with hot water. The bath is filled with water only before a patient's coming (the water temperature is measured). The bath should have electroheater to warm clothes. There are packages with clean clothes and a bath sponge. After a patient's washing a bath is washed with soap, rinsed out with 1% chloramine solution. An oil-cloth pillow and an oil-cloth on a couch is wiped out with a cloth moistened in 2% chloramine solution or

with 0,5% chloric solution, and then it is washed with soap. Bed sheets on a couch are changed after every patient. Wet cleaning of a room is done several times a day. Bath sponges should be kept in different containers, marked "*used bath sponges*", "*clean bath sponges*".

Depending on the character of a disease and a patient's condition hygienic treatment of a patient can be *complete* (a bath, shower) or *partial* (rubdown, washing). A patient for whom a bath or a shower are not recommended, are rubbed down by warm water with the addition of eau-de-Cologne, vinegar or alcohol.

The hygienic bath and shower are not recommended for women in labour, patients with skin diseases, wounds, bleedings, tuberculosis, exhaustion, myocardial infarction, acute cardiac and vascular insufficiency, cerebral circulation disorder.

Taking a hygienic bath

Equipment: a bath, a thermometer, a wooden bench, a bath sponge, soap.

1. Before the hygienic treatment of a patient a bath is filled first with cold water and then with hot water for 2/3 of a bath volume. Such an order of a bath filling will allow to reduce formation of steam in a bathing room. The temperature of water should be within 34-36°C.

2. In a bath a patient is given such a position when water reaches the upper third of his chest. In the foot part of a bath a wooden support is put so that a patient could not slip or slide off a bath (fig. 1).

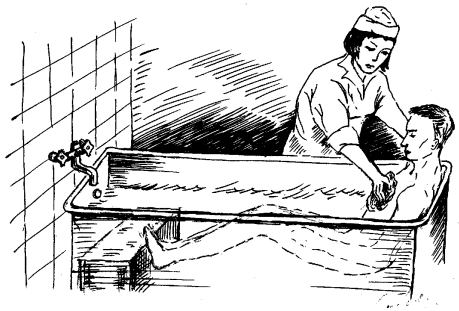


Fig. 1. Position of a patient in a hygienic bath.

3. It is necessary to wash a patient with a bath sponge and soap in the following order: the head, the trunk, arms and legs, the inguinal area and the perineum. Special attention is paid to places of sweat accumulation.

4. The average stay of a patient in a bath is 15-30 minutes, but the time is defined by a patient's condition.

5. Do not leave a patient in a bath without supervision: watch his appearance and feel his pulse.

A patient can be washed under a shower. This method of sanitization should be preferred, as a patient usually bears a shower better than a bath. Besides being under a shower a patient is washed all the time by pure water.

After a hygienic bath a patient's nails on hands and feet should be trimmed if it is necessary.

If a patient's condition is satisfactory, *anthropometry* (weighing, measurement of height and the chest circle) is carried out. The anthropometry is a complex of ways and methods to measure a human body.

Weighing a patient

Equipment: medical scales.

1. Open the lock of the scales and regulate the scales with a screw: the level of the scales beam on which all weights are in "zero position" should coincide with a control mark.

2. Close the lock and offer a patient to get up cautiously in the center of a platform of scales (without slippers) (fig. 2).

3. Open the lock and move weights on beam lathes to the left until the beam takes the level of the control mark.

4. Close the lock of scales.

5. Write down the results on a temperature chart.

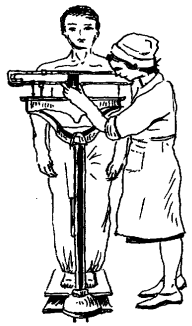


Fig. 2. Weighing a patient.

Weighing a patient is carried out when a patient is admitted to the hospital, weekly and in the discharge from the hospital. Great attention is given to a body weight of patients as during heavy exhausting diseases the increase of body weight is indicative of the improvement of a patient's condition, while the decrease of body weight in obesity shows the correctness of the appointed treatment. In heart failure the increase of body weight, on the contrary, is a bad symptom (retention of fluid in an organism), and the decrease is a good one (edema decrease).

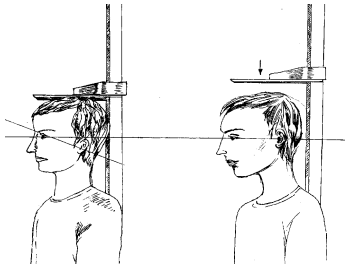
Weighing should be carried out under certain conditions: in the morning, on an empty stomach, only in underclothes, after intestinal and urinary bladder evacuation.

Measurement of height with the help of height meter

Equipment: height meter (sometimes combined with medical scales).

1. Stand aside from a height meter and lift a measuring lath from its initial level (it is 100 cm from a platform) up to a level above the prospective height of a patient.

2. Ask a patient to rise on a platform in the following way: his heels, buttocks and scapulae should touch a height meter lath; the head should be in such a position when an ear tragus and an external corner of the eye-socket were on a horizontal line (fig. 3).



A B

Fig. 3. Wrong (A) and correct (B) positions of the head in a patient's height measurement.

3. Put a height meter lath on the vertex of a patient and define his height on the scale of lath lower edge (fig. 4).

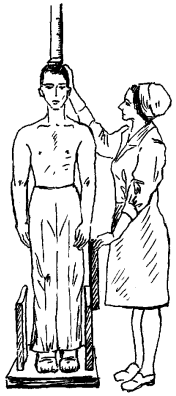


Fig. 4. Measurement of a patient's height.

Measurement of a chest circle (circumference)

Equipment: a centimeter tape-measure.

Measurements usually are performed during calm breathing.

1. Apply centimeter tape-measure to a patient so that from behind it passes under the inferior corners of scapulae, and from the front it is at the level of the IV rib (under nipples in men) (fig. 5).

2. Note the results.

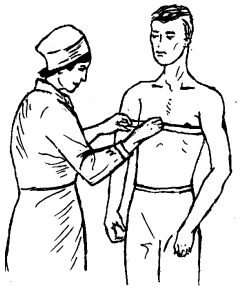


Fig. 5. Measurement of a chest circle.

Transportation of patients to a department

To the department patients are directed on foot, by a wheel-stretcher or a stretcher depending on the health state by the order of a doctor. Means of transportation (wheel-stretcher, a stretcher) are provided with bed sheets and blankets. They should be changed after every use. Patients who move from an emergency department without any assistance go to a ward attended by junior nurses, nurses or hospital attendants.

Transportation of a patient by a wheelchair

Equipment: a wheelchair.

1. Incline a wheelchair forward, stepping on a pedestal for feet.

1. Ask the patient to rise on a pedestal for feet, then supporting a patient seat him into a wheelchair.

2. Put a wheelchair to initial position.

3. During transportation a patient's hands should not be outside the armrests of a wheelchair (fig. 6).

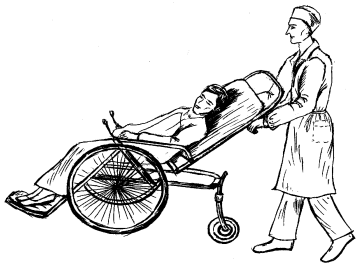


Fig. 6. Transportation of a patient by a wheelchair.

Transportation of a patient by a wheel-stretcher

Equipment: a wheel-stretcher

1. Put a wheel-stretcher perpendicularly to a couch so that its head part approached the foot part of a couch.
2. Three hospital attendants must stand near a patient on the same side. The first attendant puts his hands under the head and shoulders of a patient, the second one - under the pelvis and the hips, the third one - under the thighs and shins (crura).
3. Lifting a patient, turn together with him for 90° towards a wheel-stretcher side.
4. Lay a patient on a wheel-stretcher and cover him.
5. Inform a department nurse, that a patient is directed to the department (by a wheel-stretcher).
6. At the department: the head part of a wheel-stretcher should be brought to the foot part of a bed, three attendants lift a patient and, turning together with a patient for 90° put him to a bed.

Hand transportation of a patient by a stretcher

Equipment: a stretcher.

1. It is necessary to carry a patient on a stretcher without hurry and shaking.
2. Downstairs a patient should be carried with legs forward, it is necessary to rise the leg part of a stretcher and to lower the head part of it (thus putting a stretcher into a horizontal position) (fig. 7).

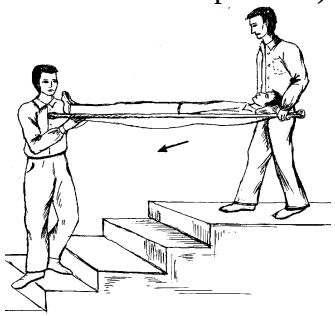


Fig. 7. Transportation of a patient downstairs by a stretcher.

Upstairs a patient should be carried with the head forward in a horizontal position (fig. 8).

Carrying over patients from a stretcher to a bed demands skill and care. Usually it is done by 2-3 hospital attendants. For the convenience a stretcher is put to a bed at the right angle, in parallel, successively, closely. Carrying over a patient when a stretcher is closely put to a bed demands from a patient certain efforts and it is not always allowed.

At the department a charge nurse meets a patient, gets acquainted with him and with his case history, shows him a ward, a lavatory room and other rooms, informs of the regimen at the department. Then a nurse reports on the admitted patient to a doctor and gives a patient's case history to doctor. Depending on a patient's condition the doctor examines him immediately or during the round. The doctor makes prescriptions which a nurse is obliged to carry out.

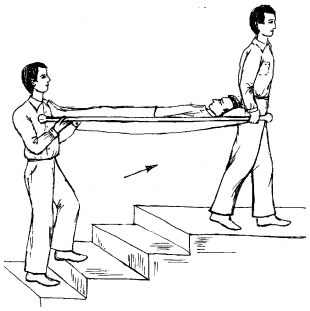


Fig. 8. Transportation of a patient upstairs by a stretcher.

GLOSSARY

Emergency department (emergency room, admitting department) is a part of a hospital where admission, registration, survey, initial examination of patients, sanitization of patients, rendering the qualified medical aid and diagnosis are carried out.

Registration office is a room where registration of patients is carried out.

R*oom* for patient's examination is a room where the survey and initial examination of patients is carried out.

Sanitary inspection room - a complex of rooms where the sanitization of patients is carried out.

Pediculosis is a disease caused by lice.

Sanitary treatment of patients is the processing carried out in sanitary pass at the emergency department and includes disinsection (destruction of harmful insects), a hygienic bath (or a shower) and changing of the clothes of a patient.

The sanitary-and-epidemiological regimen includes wet cleaning of all rooms, maintenance of cleanliness and order and sanitization of patients.

SITUATIONAL TASKS

Task 1. A patient is delivered to the emergency department. After inspection of his scalp pediculosis was revealed. What must a junior nurse do?

The answer. A junior nurse should treat hair of a patient with soap K, comb it out with a special comb, then make a "P" mark (“pediculosis”) on the title page of a case history.

Task 2. A patient delivered to a hospital (from an apartment, without being attended), died at the emergency department. What is a nurse obliged to do apart from registration of the documentation?

The answer. A nurse is obliged to give a telephone message to relatives, make the appropriate record in “the Book of the telephone messages”. In case of absence of the telephone in a patient’s flat the information is transferred through a police station in a patient’s residence.

Task 3. A patient with bleeding was delivered to the emergency department. Is it possible for this patient to take a hygienic bath?

The answer. No, it is impossible.

Task 4. A doctor prescribed weighing of a patient. A junior nurse decided to do it after a dinner. Is it correct?

The answer. No it’s not. Weighing should be made in the morning, on an empty stomach.

Task 5. A patient with myocardial infarction was admitted to the emergency department. A junior nurse decided to direct a patient to department on foot, without a doctor’s instruction. Is it correct?

The answer. No, it is not. A doctor should determine a kind of transportation to the department. A patient with myocardial infarction

should be transported by a wheelchair or by a stretcher.

CONTROL QUESTIONS

1) What is the emergency department of the hospital intended for?
2) What rooms does the emergency department of the hospital consist of?
3) What are the duties of a junior nurse at the emergency department?
4) What order does the work of the emergency department proceed in?
5) By what ways can the patients be delivered to the emergency department by?
6) What documents should a nurse of the emergency department fill in?
7) What does sanitization include? What are the kinds of sanitary treatment?
8) What rooms does the sanitary inspection of the emergency department of a hospital include?
9) What are the facilities of a room for seeing patients?
10) How is the disinsection made in cases of pediculosis?
11) How the disinsectization of clothes of pediculosis patients is is carried out?
12) What kinds of sanitization are there?
13) What are the contradictions in taking a bath and a shower?
14) How is the patients weighing is carried out?
15) How is the measurement of patient’s height carried out?
16) How is the measurement of the circle carried out?
17) How is the transportation of patients to the department carried out?

UNIT 1
Theme 4. WORK of a DEPARTMENT NURSE in CHARGE. PERSONAL HYGIENE of a PATIENT (CHANGE of CLOTHES)

Goal: to get a notion about the work of a nurse in charge; patient’s personal hygiene (rules of changing the clothes); to master skills.

Knowledge objectives:

- to know the arrangement and the equipment of the medical

department; the organization of a nursing station; concept of health care regimens at the department; concept of sanitary and epidemiological regimens; duties of a junior nurse in a ward and at the department; rules of the preparation of chloric disinfectant solutions; rules of bed-clothes and linen change.

Skill objectives:

- to develop practical skills: change of bed-clothes and linen.

Subject-matter:

1) the arrangement of medical department;
2) health-care regimens;
3) work of a nurse in a ward;
4) personal hygiene of a patient (change of linen);
5) practical skills.

EDUCATIONAL MATERIAL

«What does the term "hygienic conditions" mean?
As a matter of fact it implies just light, warmth, pure air,
healthy food, harmless drinking water, cleanliness ... »
F.Nightingale

Clinical course and outcome greatly depends of setting where the patient stays. Keeping hygienic standards in the wards, comfortable beds, proper food of high quality are necessary for the effective treatment.

A junior nurse plays one of the important roles in the maintenance of rules and favourable conditions in wards.

The equipment of therapeutical department

Therapeutical department of a hospital includes:

1) wards for patients;
2) sanitary block (a bath, a shower, a lavatory room);
3) pantry for food distribution and a canteen for patients;
4) procedure rooms;
5) special procedure rooms (a special room for enema procedures);
6) doctor's consulting rooms, an office of the head of the

department;

7) room for keeping clean body linen and bed-clothes. The wards are provided with beds, bedside-tables, chairs, a fridge, one common table.

Nursing station

Nursing station is organized for every 25-30 beds. Here there should be a table with locked drawers, an armchair, a closet and a refrigerator for storage of medicines, a closet for keeping subjects of care, a mobile table for distribution of drugs. At the station it is necessary to have means of communication with seriously ill patients (a light panel, a bell), local telecommunication, a list of official phones.

Health care regimen

The health care regimen is a complex of the preventive and medical actions that provide maximal physical and psychic comfort for patients. To create and to provide such regimen is a duty of the whole medical staff.

It includes the following points:

1) securing of the sparing regimen of a patient's psychics;
2) maintenance of the rules of the hospital daily routine;
3) regulations on the rational physical activity of patients.

Psychological comfort of a patient is gained by creating the calm atmosphere at the department (to keep silence; prohibit cleaning of rooms during the day and night rest, TV and radio volume should be low, the wards and halls should be light-coloured, the halls should be provided with comfortable arm-chairs and decorated with flowers.

It is necessary to demand from patients to follow the daily regimen and for medical staff not to break it. A patient should not be woken up before the fixed time, it is necessary to turn off the TV in a hall in time and in the wards radio and TV should be turned off after 10 p.m.

The daily regimen creates favourable conditions for the recovery of patients, when proper feeding of patients, medical prescriptions and sanitary-and-hygienic actions are precisely carried out.

DAILY SCHEDULE

7.00	*Waking up*
7.00 - 7.30	*Temperature taking*
7.30 - 8.00	*Morning washing*
8.00 - 8.30	*Delivery of medication*
8.30 - 9.30	*Breakfast*
9.30 - 12.00	*A doctor's round*
12.00 - 14.00	*Medical procedures*
14.00 - 14.30	*Lunch (dinner according to Russia)*
14.30 - 16.30	*Rest hour*
16.30 - 17.00	*Temperature taking*
17.00 - 17.30	*5 o'clock tea (afternoon tea according to Russia)*
17.30 - 19.00	*Visiting hours*
19.00 - 19.30	*Delivery of medications*
19.30 - 20.00	*Dinner (supper according to Russia)*
20.00 - 21.30	*Free time*
21.30 - 22.00	*Evening washing*
22.00 - 7. 00	*Night rest*

An important element of the health care regimen is a rational limitation of physical (motor) activity of patients. First of all it concerns seriously ill patients, with hypertension during exacerbation (hypertension crisis), myocardial infarction, severe heart failure etc. In such cases the irrational increase of physical activity can lead to extra functional load on some organs (heart, brain, liver).

4 regimens of physical activity are usually used in medical institutions:

1) strict bed regimen;
2) bed regimen;
3) ward regimen;
4) general regimen (outside the ward).

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Work of a nurse on duty at the department

The clinical course and outcome of diseases greatly depends on setting where a patient stays. Keeping hygienic standards in the wards, comfortable beds, proper food of high quality are necessary for effective treatment. A junior nurse plays one of the important roles in the maintenance of the rules and favourable conditions in wards.

The sanitary and epidemiological regimen of the therapeutical department includes wet cleaning of all rooms, cleanliness and order maintenance and sanitization of patients.

To create favourable conditions in a ward a nurse should organize her work depending on the daily regimen.

Before waking up of patients, i.e. about 7 a.m., a junior nurse should be at the department with the necessary stock for a morning washing of patients and cleaning of rooms. She switches on the light in wards. While a nurse is taking temperature, a junior nurse airs rooms, opens windows transoms. For a weakened patient a junior nurse brings a basin and water for washing, she washes seriously ill patients herself. She takes away spittoons, bedpans. She makes beds over again. She helps with urinals and bedpans some patients. Before breakfast she gathers urine or feces for laboratory examination. A junior nurse washes seriously ill patients with nocturnal urinary or fecal incontinence. After that she prepares everything to do a ward. A ward must be cleaned up before a doctor's round.

Before breakfast a junior nurse changes her clothes and carefully washes hands. *During the breakfast* she helps a nurse to feed patients.

After the breakfast a junior nurse starts cleaning up wards.

Cleaning up the wards

1. Open small opening window and air a ward. In winter it is necessary to cover all the patients and to tuck up the blankets under patients' legs and trunks.

2. Wet cleaning is done since dust contains microbes which can cause various diseases among weakened patients. It is necessary to carry out wet cleaning not less than twice a day with disinfectants (solutions of chloramine, sulfochlorantine, "Dezokson-1" etc.).

Rules of disinfectant preparation

Chlorine-containing working solutions:

1. The solution of lime chloride is prepared as follows: 1 kg of dry lime chloride is poured with a small amount of water and carefully mixed. Then *10* l of cold water is added and the solution is placed into a dark room in a glass bottle. The solution should be settled for 12 hours. After that it is poured out into a large dark bottle and closed. This is a way to get 10% clarified solution of lime chloride. It is possible to store it for 5-7 days in toilet rooms or special rooms in a dark place since it decomposes in the light.

2. Then *a working solution of* lime chloride of different concentrations is prepared:

- 0,2% solution: 200 ml of 10% lime chloride solution is poured into 9,8 l of water (it is usually used for washing up);
- 0,5% solution: 500 ml of 10% lime chloride solution is poured into 9,5 l of water;
- 1% solution: 1 l of 10% lime chloride solution is poured into 9,0 l of water (last 2 solutions are usually used for washing baths and lavatory pans).

3. Chloramine solution is prepared just before the use (chloramine is *added* to the necessary amount of water and then stirred):

- 2% solution: 20 g of chloramines is added to 980 ml of water;
- 5% solution: 50 g of chloramines is added to 950 ml of water.

Preparation of disinfectants should be carried out carefully, in *specially equipped* rooms (with forced-air ventilation).

Cleaning is made by a brush, swab and the cloths moistened in a disinfectant.

In a ward cleaning is begun with bedside tables: they are dusted, all the unnecessary things are taken away except soap, a tooth-paste, cookies, jam, sweets and books. Fruits and perishable food should be kept in a refrigerator. Then beds surface, radiators, pipes, windowsills, lamps, and furniture are dusted. During cleaning silence should be kept. Activity of a junior nurse should not disturb patients. Cleaning up should be done accurately, without leaving out corners and remote places. A ward should be swept towards a door; dust is gathered with a dust-pan and is put into a refuse chute or is burned.

After dinner wet sweeping with disinfectant and airing of a ward are carried out. Depending on a season during the afternoon rest hour it is desirable to leave a transom or a window open. A junior nurse should watch up, that at this time – *time of rest hour* – the silence was kept at the department (all kinds of cleaning, loud talking, walking, banging doors, phone talks are forbidden). Sleep of a patient should not be broken: sleep greatly contributes to a patient's recovery. After sleep a junior nurse gives tea to patients.

After supper a junior nurse wipes a floor with wet cloth, airs a ward, helps a nurse to carry out evening prescriptions (to do enemas, to wash seriously ill patients etc.), covers seriously ill patients with blankets and switches off the light in wards.

After falling asleep heavy and restless patients are kept under observation of the younger medical staff.

Cleaning of corridors and auxiliary rooms should be done everyday at the certain time. Doors, the panel, furniture, handles in corridors are wiped with a wet cloth. Cleaning is finished by washing of floors with the clarified chloramine solution. Lavatory pans, sinks, urinals, tanks for water storage, spittoons are washed everyday by hot water with soap and disinfectant. Baths, urinals, bedpans are washed and disinfected after every use with 0,5% chloramine solution. *Toilet rooms* should be well isolated from other rooms and have the intermediate sluice, safe working ventilation, sufficient light. It is necessary to have closets for keeping bedpans, urinals, containers for gathering feces and urine there. The cleaning stock should be separate for wards and toilet rooms and used strictly to the purpose. It should be accordingly marked and kept clean. Brushes, cloths, basins are regularly washed with hot water, cloths being dried. Brushes for washing urinals and bedpans are also washed out and disinfected. Bedpans, urinals are carefully washed out with hot water and disinfected in 2% chloramine solution. If infectious intestinal disease is revealed, feces are kept in 20% lime chloride solution for 2 hours, and after that a bedpan is emptied. Clean bedpans and urinals are kept in toilet rooms in special cells. In some hospitals there are machines for bedpan washing. Toilet rooms are cleaned in case of need and well aired to avoid smell. Washstands, urinals and lavatory pans are washed every day with 2% sodium carbonate solution, brown spots are sponged with acetic acid.

A junior nurse should clean toilet rooms in rubber gloves. After cleaning she should wash hands with soap and 2% chloramine solution that should be kept in every toilet room.

Personal hygiene of a patient (change of clothes)

Observation of the rules of personal hygiene, cleanliness in wards and beds are major preconditions for the effective treatment.

Position of a patient in a bed should be comfortable, bed-clothes should be clean, and a mattress should be smooth. If a bed is with a wire-net, it should be tense. For seriously ill patients and patients with urinary and fecal incontinence an oilcloth is put on a mattress. To women with profuse discharge a swaddling cloth is put on an oilcloth which is changed not less than twice a week. Seriously ill patients are laid on the functional beds with head-holder. A nurse gives a patient 2 pillows and a blanket with a cover. A bed is made over regularly before and after sleep. Underwear and bed-clothes are changed not less than once a week after a bath and in cases of becoming dirty.

Rules of bed-cloth change

The first way:

1. To roll a dirty bed sheet in to a roller from the head and legs side of a patient (fig. 9).
2. To lift a patient carefully and to remove a dirty sheet.
3. To lay under the loin of a patient a clean sheet rolled in the same way and smooth it.

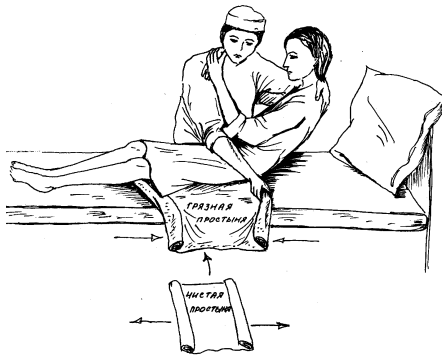


Fig. 9. Change of a patient’s bed-clothes (the first way).

The second way:

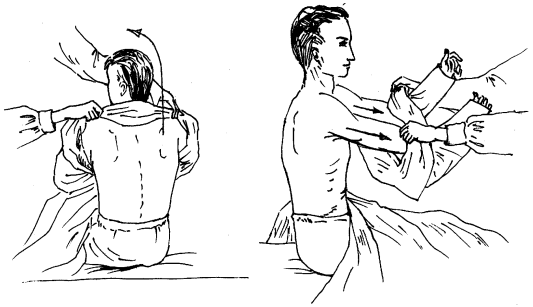
1. To move a patient to the edge of a bed.
2. To roll a free part of a dirty sheet towards a patient (fig. 10).
3. To spread on the released place a clean sheet, the half of which is rolled.
4. To remove a patient to the spread half of clean sheet, then to remove a dirty one and smooth a clean sheet.

Fig. 10. Change of a patient’s bed-clothes (the second way).

Change of underwear

1. To bring your hand under a back of a patient, then to lift an edge of his shirt up to the axillary area and the nape.

2. To take off a shirt over a head of a patient (fig. 11 A), and then from his hands (fig. 11 B).



A B

Fig. 11. Change of a patient’s underwear.

3. To put on a shirt in the reverse order: first put on sleeves, then throw a shirt over the head and straighten it under the back of a patient.

4. To put a “thrown-open” shirt on a patient who is confined to bed.

SITUATIONAL TASKS

Task 1. A patient is prescribed to make urinalysis. On the eve a junior nurse informs a patient of the appointed examination, gives a special bottle and asks him to gather the morning portion of urine. The next day at 12 o'clock she brings a bottle with urine to the laboratory. Are the actions of a nurse correct?

The answer. No, they are not. Urine should be brought to the laboratory not later, than in an hour after its collection.

Task 2. While cleaning up wards a junior nurse used the same washing material (brush) as for cleaning up lavatory rooms. Was it correct?

The answer. No, it wasn't. The washing material (mop) should be separate from those of the lavatory rooms.

The 3. A junior nurse changed patient's bed-clothes. At night a patient had vomiting. Bed-clothes became dirty. In the morning a patient asked a junior nurse to change bed-clothes again. She refused, motivating it by the rule of changing bed-clothes once a week. Is it right?

The answer. It is not right. Bed-clothes should be changed once a week, and also when they become dirty. In this case a junior nurse should give a patient clean bed-clothes.

CONTROL QUESTIONS

1) What is the arrangement of the therapeutical department?
2) How is a nurse station organized?
3) What are the health care regimens at the department?
4) What must a junior nurse do in the morning before cleaning of wards?
5) How is the cleaning of wards carried out?
6) How is the solution of chloramine prepared?
7) What should a junior nurse do after dinner, after supper?
8) How is the cleaning of corridors and other rooms carried out?
9) How is the change of patient's bed-clothes carried out?
10) How is the change of patient's underwear carried out?

Theme № 5. PERSONAL HYGIENE of a PATIENT

Goal: to get a notion about personal hygiene of the patient.

Knowledge objective:

- to know rules of care of oral cavity, eyes, ears, nose, ways of prevention of bedsore.

Skill objective:

- to be able to wash the patient's perineum, to give a bedpan, to carry out a hygiene of oral cavity, to wash oral cavity (irrigation), to smear the mouth, to take pharyngeal and nasal swabs for bacteriological test, to wash eyes, to drop medications in eyes, to put an ointment on a lower eyelid from a tube and with scoop, to wash external auditory meatus, to drop medicines in ear, to clean nose, to drop medications in a nose.

Subject-matter:

1) care of a skin and prevention of bedsores,
2) use of urinals and bedpans,
3) care of the oral cavity,
4) care of eyes,
5) care of ears and a nose,
7) care of hair.

Equipment required: a lamp - reflector, spatulas, tweezers, glass sticks, droppers, a tray, a flat glass bottle, a rubber circle, gauze napkins, cotton balls, syringes, a metal shaving brush, a test tube, eye ointment, a Jeane syringe, a metal probe, a rubber container, irrigator, a vessel, and bedpans.

EDUCATIONAL MATERIAL

"Administration of drugs is minor business; the main thing is correct hygienic conditions and a skilful, sensible care of a patient"
F.Nightingale

Clinical course and outcome in great extent depends on setting where a patient stays. Keeping hygienic standards in the wards, comfortable bed, following personal hygiene, providing of high quality food, balanced diet are necessary for effective treatment.

Care of skin and prevention of bedsore

The skin carries out some functions:

1) protective,

2) analytical (skin sensitivity),

3) regulation of a body temperature (feedback of heat through sweat producing (perspiration) at the healthy person makes 20% of all warm production for day, and at feverish patients - it is much more),

4) secretory.

Through the skin and its sweat glands water, urea, a uric acid, sodium, potassium and other substances are released. At rest at normal body temperature it is released about 1 l of sweat per day, and at feverish patients up to 10 l and more.

On a skin at evaporation of sweat there are the products of metabolism that destroy it. Therefore the skin should be clean, so it is necessary to change linen, to wipe skin with eau-de-cologne, water with alcohol (1:1), disinfectant napkins or solutions, for example - 1 glass of water + 1 spoon of vinegar + 1 spoon of camphor alcohol, to wipe skin with a dry clean towel.

Special attention is paid to inguinal area, axillas, at women – under mammary glands. The skin of perineum demands daily washing. Walking patients use bidet for this purpose. Seriously ill patients should be washed underneath after each defecation, and in cases of an incontinence of feces and urine - many times a day in avoidance of maceration and inflammation of skin in inguinal area. Women wash underneath more often.

Bedsore (decubitus) can appear at seriously ill patients– necrosis of the skin with involving hypodermic cellular tissue and other soft tissues. Decubitus ulcers appear more often on sacrum, shoulders, heels, elbows because of long pressure and disturbances of blood circulation in it (fig. 12). First appear redness and tenderness, then epidermis (a superficial layer of skin) husks, bubbles are formed. In case of deep decubitus ulcers muscles, tendons and periosteum are naked. Necrosis and ulcers develop penetrating sometimes up to a bone. The infection penetrates through the injured skin causing suppuration and even sepsis. Appearance of decubitus ulcers is the indication of an insufficient care of the patient!

When a part of skin becomes red it is necessary to wipe it 2 times a day with 10% camphor alcohol, a damp towel, irradiate with a quartz lamp. If decubitus ulcers are formed, it is necessary to grease them of 5 % with a solution of potassium permanganate, to bandage with an ointment of Vishnevsky, or synthomicine liniment etc.

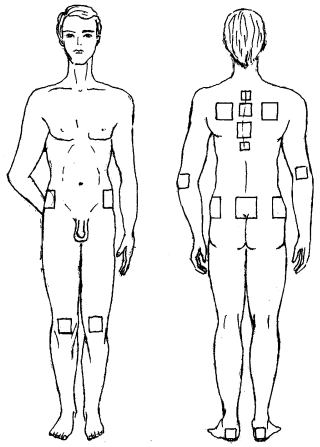


Fig. 12. Places of the most often formation of decubitus ulcers.

Prevention of decubitus ulcers:

1) to change the position of the patient every 1.5-2 hours;
2) to smooth folds on bed and linen;
3) to wipe skin with disinfectant;
4) to change the wet or dirty linen immediately;
5) to use rubber circles placed in a cover or covered with swedding cloth. A circle is enclosed so that the place of ulcer is above an aperture of a circle and did not touch bed. Also special inflatable matresses with a crimped surface;
6) patients should be washed in time.

Usage of bedpans

For patients on a strict bed regimen, if feces evacuation is necessary, bedpan is submitted in bed, and if it is necessary to empty the urinary bladder - urinals (women at urination usually use a bedpan).

Bedpans are usually metal with an enamel covering or rubber. Rubber bedpan are applied to the impaired patients, and also in case of decubitus ulcers, and in case of an incontinence of feces and urine.

Washing underneath of ill women

The equipment: a jug with warm (30-35°C) a light solution of potassium permanganate (antiseptic means) or water, straight packer, a napkin, an oilcloth, a bedpan.

1. To help the patient to lie on the back (legs should be slightly bent in knees and separated).
2. To lay an oilcloth and put a bedpan on it.
3. To stand to the right of the patient and, holding a jug in the left hand, and napkin in right, flow an antiseptic solution on genitals, and make movements with a napkin from genitals to anus, i.e. from the top downward.
4. To drain by a dry napkin the skin of perineum in the same direction.
5. To remove a bedpan and an oilcloth.

Giving a bedpan

The equipment: a bedpan, an oilcloth, a screen, disinfectant.

If the seriously ill patient wants to have urination or defecation, it is necessary:

1. To put the folding screen from others, to lay an oilcloth under a pelvis of the patient.
2. To rinse a bedpan with warm water, having left some water in it.
3. To bring the left hand sideways under sacrum of the patient, helping the patient to raise a pelvis (the legs are bent in knees).
4. To bring by the right hand a bedpan under buttocks of the patient so the perineum appeared above an aperture of a bedpan.
5. To cover the patient with a blanket and leave him alone for a while.
6. To pour out contents of a bedpan in a lavatory bowl, having rinsed a bedpan with hot water.

7. To wash the patient’s underneath, drain perineum, remove an oilcloth.
8. To disinfect a bedpan with disinfectant.

Care of oral cavity

Inspection of oral cavity. The patient opens a mouth. Nurse delays lips and cheeks of the patient with a spatula. At examination of tonsilles and a back wall of pharynx the nurse presses with a spatula on a root of the tongue and offers the patient to make the sound "a". At examination of an oral cavity, tonsilles and pharynx the illumination is necessary for what it is possible to use a lamp - reflector or any other lamp.

It is necessary for each person to keep elementary rules of oral cavity hygiene:

- to rinse a mouth with water after each meal;
- to clean teeth before sleeping and in the morning since during the night the surface of a mucous membrane and teeth becomes cover by the soft deposit consisting of epithelium cells, slime and microorganisms.

Formation of a deposit is accelerated in patients, since products of metabolism start to be released through a mucous membrane of the oral cavity: nitrogenous substances if renal insufficiency, sugar if a diabetes, mercury if mercury poisonings etc. These substances pollute a mucous membrane and cause intensive multiply of microorganisms. The care of an oral cavity should be more careful, it’s carried out by nurse at seriously ill patients.

Gargling of the mouth

After each meal the patient has to gargle his mouth with 0,5 % solution of sodium hydrocarbonate (a solution of baking soda) or 0,9 % solution of sodium chloride (a physiological solution). Then wipe the tongue: it is necessary to impose a sterile gauze napkin on a tip of a tongue, extend it from an oral cavity by the left hand, and by the right hand to remove a coating from a surface of tongue with a cotton balls in tweezers and to grease tongue with glycerin (fig. 13).

Fig. 13. The care of the oral cavity of a patient: cleaning of tongue.

Washing of oral cavity is carried out with the help of a syringe, a rubber container, irrigator, a rubber tube and a glass tip. Usually light solutions are applied: 0,5 % of sodium a hydrocarbonate, 0,9 % of chloride of sodium, 0,6 % of peroxide of hydrogen, permanganate potassium (1:10000) etc. Set the patient or give him position with a little bit tilted head that the liquid has not got in respiratory ways. Cover the neck and breast with an oilcloth, and substitute a basin or a tray to the chin. If the patient is lying on his back, the head should be turned; if it is possible, also to turn the patient sideways. Delay a corner of a mouth with spatula and wash out a threshold of his mouth, and then an oral cavity actually in running water. If the seriously ill patient has artificial dentures it is necessary to take them out before procedure, to wash up and to dry. It is not recommended to store artificial dentures in a glass of water, since the microbes on a surface of an artificial dentures are well kept in a dump environment.

Smearing of the mouth is administered in diseases of the oral cavity mucous. Boiled spatula, and some sterile cotton balls, tweezers put on a sterile tray. From a bottle pour a small amount of a drug in a flat glass vessel. Ask the patient to open a mouth, take a cotton ball with tweezers, smear it with medication and, helping your self with a spatula, press a cotton ball to the struck place of a mucous membrane, then take a fresh cotton ball, smear with his medicine and put to other place of lesion (fig. 14).

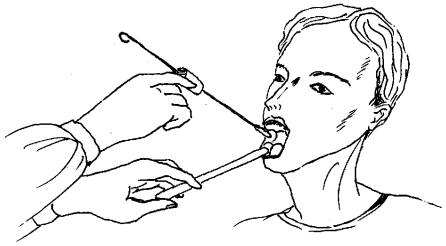


Fig. 14. Smearing of the oral cavity.

PRACTICAL SKILLS

Wiping of the oral cavity and teeth

The equipment: a spatula, cotton balls, tweezers, an antiseptic solution (2 % a solution of sodium hydrocarbonate, a light solution of potassium permanganate) or warm boiled water. It is necessary:

1. To wrap up tongue with a sterile gauze napkin and extend it from a mouth carefully by the left hand.
2. To take a cotton balls to moisten it with antiseptic solution and, removing a strike to wipe tongue with tweezers in the right hand.
3. To let off tongue, to replace a tampon and to wipe teeth both internal and lateral sides.
4. To ask the patient to rinse a mouth (if it is possible).

The washing (irrigation) of the oral cavity

The equipment: irrigator with a glass tip and a rubber tube (either a pear-shaped cylinder, or a syringe Jeane), an oilcloth, a tray, a spatula, an antiseptic solution. It is necessary:

1. To pour warm antiseptic solution in Esmarch cup and rise it 1 m above head of the patient.
2. To turn the patient’s head on one side (or he can choke!), to cover the neck and breast with an oilcloth, to bring a tray to the chin.
3. To delay a corner of a mouth with a spatula, to enter a tip into a threshold of a mouth and to wash it with a jet of a liquid under moderate pressure.
4. To wash left, then right space behind a cheek (to delay a cheek with spatula).

Smearing of an oral cavity

The equipment: boiled spatula and a tweezers, some sterile cotton balls, a sterile tray, a medication, a flat glass vessel. It is necessary:

1. To put a small amount of a drug in a flat glass vessel from a bottle.
2. To ask the patient to open his mouth.
3. To take a cotton ball with tweezers, to smear it with medication.
4. To press a cotton ball to the struck place of a mucous membrane with the help of a spatula.
5. To take a fresh globule with a medicine and to put it on other place of lesion.

Taking of a swab from a mucous membrane of oral cavity, pharynx and nose

Apply a sterile metal small brush (a cotton tampon, put on a wire and missed through a fuse in a sterile test tube). For bacteriological study usually take swab from ulcers or from tonsils, arches of the palate and a mucous of the oral cavity.

The patient sits in front of a lamp and opens his mouth widely. With a spatula in the left hand press a root of the tongue, by the right hand take from a test tube a small brush, reach and remove the coating.

For a taking a swab from a nose enter a small brush in one, and then in another nostril and take sample very carefully, not touching an external surface. After taking swabs they should be sent to laboratory with the indication of a surname of the patient, his age, number of ward, the name of department, date, the name of a material and the purpose of test.

Taking of a swab from the pharynx

The equipment: a sterile small metal brush in a glass test tube with a fuse, a spatula.

For samples are usually taken from ulcers or from tonsils, arches of the pallate. It is necessary:

1. To set the patient in front of the light source, to ask him to open his mouth widely.
2. To press a root of patient's tounge with spatula by the left hand.
3. By right hand to take from a test tube a small brush for an external part of a fuse and, not touching mucous of a mouth to carry out a small brush on arches and tonsils.
4. Carefully, not touching an external surface of a test tube enter a small brush with assay samples into a test tube.
5. To fill in a slip (name and surname of the patient, « Swab from a pharynx », date and the purpose of test, the name of medical institution).
6. To send a test tube with a direction into laboratory.

Care of eyes

For removal of pus, eyes are washed with 3% solution of a boric acid, a solution of rivanol or a light solution of permanganate potassium (having pink color) from rubber container or a gauze tampon. For gathering a liquid running down a tray is used, which patient holds under a chin. At inflammatory diseases of eyes the drop of medications or the rub of ointments are used.

A lower eyelid is slightly drawn by the left hand, the patient is offered to look upwards, one drop, then the second are poured in a medial eye's edge (fig. 15). When the patient closes his eyes surplus of drops follows to eyelids, take it by cotton ball. A dropper is washed out and put in an special box.

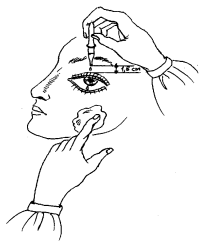


Fig. 15. The care of eyes: dropping medication in an eye.

Usually eye ointment is put on an eyelid by a glass stick (fig. 16). By the tip of a stick you take ointment, delay a lower eyelid downwards and touch it to bottom of transitive fold. Thus a stick is carefully extended in horizontal position in a direction to a temple.

Fig. 16. The care of eyes: applying eye ointment.

Morning washing of eyes

The equipment: sterile tampons (8-10 piece), an antiseptic solution (0,02% furacelinum solution, 1-2% sodium hydrocarbonate solution), a sterile tray. The consequence of actions:

1. To wash hands carefully.
2. To put tampons on a tray and to pour an antiseptic solution.
3. To squeeze a tampon and to wipe patient's eyelashes and eyelids in the direction from an external corner of an eye to internal, then throw out this tampon.
4. To take other tampon and to repeat wiping 4-5 times (different tampons).
5. To dry a solution in corners of eyes of the patient with a dry tampon.

Washing eyes

The equipment: a glass, a solution. You need:

1. To pour a solution in a glass and to put on the table in front of the patient.
2. To ask the patient to tilt forward the head so that eyelids are in glass, then to press the glass to skin and extend his head backward (thus the liquid should not follow).

3. To ask the patient to blink frequently within 1 minute, not taking away the glass of the face.
4. To ask the patient to put glass on a table, not taking away the glass from the face.
5. To pour a fresh solution and to ask the patient to repeat procedure (8-10 times).

Dropping medication in eyes

The equipment: a sterile eye dropper, a bottle with eye drops. What to do:

1. To check up the name of drops to the doctor's prescription.
2. To take the necessary amount of drops (2-3 drops for each eye).
3. If the patient sits or lies ask him to extend his head backward slightly and to look upwards.
4. To delay a lower eyelid and, not touching eyelashes (not to bring a dropper to an eye closer than on 1,5 cm) to drop in conjunctiva of one, and then other eye.

Applying eye ointment from a tube

The equipment: a tube with eye ointment. The sequence of actions:

1. To ask the patient to extend his head backward slightly and to look upwards.
2. To delay a lower eyelid of the patient by the thumb.
3. Holding a tube at an internal corner of an eye and advancing it so that "portion" of ointments has settled down along all eyelid, squeeze out ointment from a tube on conjunctiva of a lower eyelid on its border with an eyeglobule.
4. To let off a lower eyelid: ointment will press to an eyeglobule.
5. To take away a tube from eyelids.

Applying eye ointment with a glass stick

The equipment: a sterile glass stick, a bottle with eye ointment. It is necessary to:

1. Ask the patient to extend his head backward slightly and to look upwards.

2. Take an ointment from a bottle and cover a stick.

3. Arrange a stick at an eye in horizontal position, so that stick with ointment is directed aside a nose.

4. Delay a lower eyelid and put in a stick with an ointment to an eyeglobule.

5. Let off a lower eyelid and to ask the patient to close eyes without effort.

6. Take the scoop from the closed eyelids in the direction of a temple.

Care of ears

Ears are cleaned 2-3 times a week. Earwax drops out of an ear as lumps or crumbs. They can accumulate in external auditory meatus and form earwax fuses, thus the hearing is reduced. In such cases *washing of external auditory meatus is made*. In a Jeane syringe collect 100-200 ml of water of temperature 36-37°C. Set the patient so that light falls on the ear. Put tray in the patient's hands and ask him to presses it to a neck under a cochlea.

"To straighten" external auditory meatus, the left hand draws the cochlea upwards and backwards (fig. 17). Keeping thus a cochlea, the right hand enter a tip of a syringe in external auditory meatus. A jet of a liquid force pushed on it back to a wall. Dry up the external auditory meatus after washing with cotton wool. If it is imposible to remove a fuse, it is soften with glycerin drops. Within 2-3 days 2-3 times a day pour in 7-8 warm drops. The patient knows, that after drops pouring the hearing can become worsen for some time.

Dripping in an ear is made with a dropper. Turn the patient's head to the healthy side. Draw aside the patient's cochlea by the left hand upwards and backwards, and drop in medication in external auditory meatus. So that the liquid does not follow from an ear, the patient does not change position within 15-20 minutes then an ear is wiped with sterile cotton wool.

Fig. 17. Position of the cochlea at dropping medications in an ear and washing of external auditory meatus.

The washing of external auditory meatus

The equipment: a syringe Jeane in capacity of 100-200 ml, water (36-37°C), a tray, cotton wool, glycerin drops. Nurse has to:

1. Put water in a Jean syringe.
2. Set the patient so that light falls on his ear.
3. Put a tray in patient's hands, which patient should press to a neck under his ear.
4. Draw aside cochlea upwards and backwards by the left hand, and by the right - to enter a tip of a syringe into external auditory meatus. Then push a jet of a liquid to force on back wall of external auditory meatus.
5. Dry up external auditory meatus after washing with cotton ball.

Dropping medication in the ear

The equipment: a dropper, a bottle with ear drops, sterile cotton wool. The sequence of actions

1. To tilt and turn the patient's head aside, opposite to an ear in which medication is dropped.
2. To draw the cochlea aside, and to drop in medication in external auditory meatus.

3. To offer the patient to stay in this position within 15-20 minutes (that a liquid did not follow from an ear) after that wipe the ear with sterile cotton ball.

Care of the nose

If the patient independently can not exempt nostrils, it is necessary *to delete* the formed *crusts*. For this purpose a nasal probe with cotton ball moistened with vaseline oil is used. Enter a probe in a nasal pass, and then with rotary movements delete crusts. It is impossible to delete crusts with dry cotton wool because of possible bleeding.

Taking a swab from the nose

The equipment: a sterile metal small brush in a glass test tube, a spatula. It is necessary:

1. To set the patient (the head should be extended backward slightly).
2. To take a test tube in the left hand, by the right hand to take from it a small brush.
3. To turn tip of the patient's nose to the left, and to the right - to enter a small brush with easy rotary movements in depth of nasal pass on the one side, then - on the other side.
4. Carefully, not touching an external surface of a test tube to enter a small brush with culture for crop into a test tube.
5. To fill in a direction slip (name and surname of the patient, « Swab from nose », date and the purpose of the test, the name of the medical institution).
6. To send a test tube with a direction to laboratory.

Removal of crusts from a nose

The equipment: a nasal probe, cotton wool, vaseline oil (or glycerin).

1. Reel on a probe the cotton wool moistened with oil.
2. Enter a probe in a patient's nasal pass, and then with rotary movements remove crusts (fig. 18).

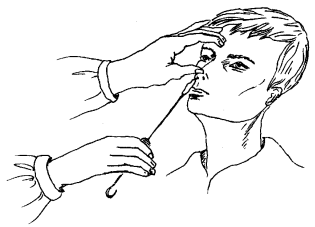


Fig. 18. Removal of crusts from the nose.

Dropping medicines in the nose

The equipment: a dropper, a bottle with drops for a nose. You need to:

1. To extend patient's head backward, opposite to a nasal pass in which medication is dropped (fig. 19).
2. To drop medication in.
3. To drops medication in another nasal pass after 1-2 minutes.

Fig. 19. Dropping medication in the nose.

Care of hair

It is necessary to watch up that the seborrhea was not formed in patient's hair. For this purpose once a week it is necessary *to wash* head, using shampoos and soaps. If the patient is seriously ill, his head is washed in bed. For this purpose put a basin at the head end of a bed, and patient's head extend backward above basin. It is necessary to wipe the skin of the head during soaping, then to rinse hair with warm water, then to dry and to comb. After washing put on a towel.

It is necessary *to comb* hair daily. Use individual hairbrush for this purpose. Often comb, moistened with a solution of vinegar, well combs out seborrhea and a dust. It is necessary to keep combs clean, wipe with alcohol, vinegar and to wash in hot water with soda or liquid ammonia. After washing patients the junior staff trims or helps them *to trim nails* on fingers and toes.

CONTROL QUESTIONS

1) How is the care of skin carried out?
2) What is bedsore?
3) How are the treatment and prevention of bedsores carried out?
4) How is the care of oral cavity carried out?
5) How is the swab taking from the pharynx carried out?
6) How is the swab taking from the nose carried out?
7) How is the care of eyes carried out?
8) How is the care of ears carried out?
9) How is the care of hair carried out?

UNIT 2. DIET AND NUTRITION

Goal: to get a notion about the principles of dietary menu therapy, to master practical skills.

Knowledge objective:

- to know the basic dietary menu, the principles of the organization of dietary menu therapy in medical establishments, the principles and the organization of artificial feeding of patients;

Skill objectives:

- to be able to choose and prescribe various diets at various diseases, to carry out feeding of seriously ill patients; to fill nutritious mixtures and solutions through a gastric probe; to enter nutritious solutions by means of feeding enema, to carry out parenteral introduction of nutrients.

Subject-matter:

1) acquaintance with patients with various diseases, their diet, dietary restrictions;

2) acquaintance with the organization of dietary menu therapy in a hospital;

3) improvement of practical skills of stating a feeding enema, insertion of a gastric probe, assembly of system for intravenous infusion of feeding solutions.

EDUCATIONAL MATERIAL

"Fresh air and the proper food are
the key rules of the care of patients"
F.Nightingale

Health of a person to a great extent depends on feeding. Hippocrates said: "Let your feed be your first medicine!" Dietetic therapy is based on I.P.Pavlov's teaching which has proved necessity of due ingestion of food, importance not only of caloric contents of food, but also of its appearance and even personal tastes. The knowledge of basic concepts of dietology, principles of rendering services for patients is very important for a therapist and will be daily used in his professional work.

Dietotherapy – is a treatment with diet of a patient during his disease. An attending physician, a diet specialist and a diet nurse organize the feeding in medical establishments. Feeding of the seriously ill patients is performed through a gastric probe, by means of feeding enemas, parenterally by the intravenous infusion of nutritious solutions. In the Russian Federation the unified dietary system has been preserved till nowadays for maintenance of an individualization of dietary menu therapy to a lot of patients with different diseases and their variable course. It includes medical diets or the dietary menu number 0-15, developed at the Institute of Feeding of the Academy Medical Sciences of the former Soviet Union. The following parameters are reflected: 1) indications for the use, 2) the purpose of assignment, 3) general characteristics, 4) chemical compounds and caloric content, 5) feeding regimen, 6) the list of products and dishes which are available, allowed or prohibited in a certain order - the products containing fibers, fats, carbohydrates, spices and drinks.

Besides the basic diets fasting diets (the so-called contrast days) are used. Medical diets are different for main nozological forms (diseases).

The characteristics of the basic medical diets

A special diet - 0 menu - is administered after intestinal operations up to 2 – 3 days, in the day after operations on lungs, the mediastinum, the heart, and also to a patient who is in a half-conscious condition (impairment of the cerebral circulation, head traumas, fever). This diet is low-caloried, restricted in the amount of fibers, fats, salt (1,5-3,0 g). The food is given in portions, every 2 hours. Liquid and jelly-like food, the skim meat broth, non-sweet fruits and berry kissel, broth of a dogrose, tea with a small amount of sugar are given to the patient. The whole milk is excluded. Eggs, mucous soups, a meat and cottage cheese soufflé are added in 4-5 days. Further a diet extends, minced meals are added.

Diet 1. The principle of a diet consists in the mechanical, thermal and chemical sparing. All food is given in the minced or half liquid form. It is prescribed for acute gastritis with increased gastric secretion, at gastric and duodenal ulcer. The food is prepared on boiled water, by mincing. The caloric value is 2500-3000 kcal. Food is taken 5-6 times a day, and before going to bed - milk, cream or kefir. Vegetable cellular tissue, aerated drinks, kvass, coffee, spices are excluded. Meat, fish, mushrooms, rye bread, coffee, cocoa are limited. Steamed cutlets are recommended.

Diet 1b. The principle of a diet: the restriction of chemical and mechanical irritation of the mucous membrane and receptors of the upper GI tract, stimulators of gastric secretion. It is given in peptic and duodenal ulcer in its acute phase, at symptoms of the irritated stomach. The physiological amount of fibers and fats is preserved, but the carbohydrates and salt are limited. The food is boiled or steamed. Food is liquid, porridge-like. Diet regimen: 5-6 times a day.

Diet 2. The principle of a diet: mechanical sparing, but stimulation of secretion. It is prescribed in the exacerbation of chronic gastritis with the decreased secretion disorder, chronic pricking, after acute infections, in impaired chewing. Food is minced. Very cold dishes

are prohibited. Food is taken 5 times a day. Aerated drinks, milk, grape juice, canned food, leguminous, bacon are excluded. Soups and cereals, vegetables on meat and fish broths, baked or boiled vegetables are recommended.

Diet 3. It is given in constipation, hemorrhoids, and cracks of the back passing without an inflammation. Strengthens impellent functions of the bowels. The diet includes vegetables, fruits, berries, bread, cereals, salty and pickled vegetables, vegetable oil, cold drinks and dishes. Patients eat 4-5 times a day. In the morning on an empty stomach they are given cold water with honey or sugar, before going to bed - compotes, prunes, a fig. Coffee, cocoa, strong tea are excluded. It is recommended to take more liquids.

Diet 4. It is prescribed in acute enterocolitis with diarrhea after fasting days, in exacerbation of chronic enteritis, dysentery, after intestinal operations. The diet is given up to 5-8 days, it reduces fermentation and putrefactive processes in the intestines, it is mechanically sparing. Rough cellular tissue, spices, pickles, fresh bread, dough, coffee, cocoa, aerated drinks, cold drinks, grape juice, milk – are excluded. The food is rubbed, boiled.

Diet 4b. It is given in acute diseases of the intestine in the recovery phase; in chronic intestinal diseases post exacerbation or during a slight attack, and sometimes also in the combination for other gastrointestinal tract disorders. Food is taken 5 - 6 times a day. Rough cellular tissue, soups (leguminous, milk, schee, borshch (beetroot soup), rassolnik (soup with pickles); fat, salty and spicy dishes; piquant, fat sauces, mustard, horse-radish, pepper; grapes, plums, apricot juices, fruit-drinks are excluded.

Diet 4c. It is given in acute intestinal diseases during reconvalescence as transition to a balanced diet; in chronic intestinal diseases during the recovery phase, and also in other gastrointestinal tract diseases. The given food is boiled and baked. I is to be taken 5 times a day. Rough cellular tissue; strong fat broths; fat, salty, spicy dishes; dairy products with high acidity; fried eggs; leguminous porridges; garden radish, radish, onions, garlic, cucumbers, swede, turnip, spinach, mushrooms; spicy and fatty snacks, smoked products, canned food; spicy and fat sauces, mustard, horse-radish, pepper; grapes, plum, apricot juices – are excluded.

Diet 5. It is used in chronic hepatitis, viral hepatitis in a recovery stage, in chronic cholecystitis. Fats are limited. Mushrooms, coffee, cocoa are excluded.

Diet 5a. It is used in acute hepatitis, exacerbations of chronic hepatitis, liver cirrhoses, acute cholecystitis, in acute pancreatitis. Fats, exclude products rich in cholesterol, rough cellular tissue, fried dishes should be limited or excluded. The food is taken 5-6 times a day. Coffee, aerated drinks, vegetables, greens, garlic, onions, garden radish, radish, leguminous are excluded.

Diet 5p. It is used in chronic pancreatitis during the recovery phase after the relapse and in remission. A diet is rich in fiber, low in fats and carbohydrates, particularly in sugar. Extractive substances, purines, refractory fats, cholesterol, radio oils, rough cellular tissue are limited, fried dishes are excluded. The amount of vitamins and lipotropic substances is increased. All food is recommended in the rubbed and crushed state, cooked in boiled water or baked. Hot and very cold dishes are excluded. Meals are taken 5 - 6 times a day. Before going to bed kefir is given. Rough cellular tissue; meat soups, fish broth, mushroom and vegetables broths, with millet, dairy soups, beetroot soups, cabbage soups; fat, salty and spicy dishes; dairy products rich in fat and sugar; dishes with hard-boiled and fried whole eggs; all spices; coffee, cocoa, aerated and cold drinks, grapes juice are excluded.

Diet 6. It is used in renal calculus disease with uric and oxalic acid calculi, in gout. The products containing oxalic acid, purines are excluded. Fats, fibers are limited, in obesity carbohydrates are restricted. Liquids are given in the amount of 2-2,5 l (alkaline mineral waters), food is taken 4-5 times a day. Coffee, cocoa, strong tea – are excluded.

Diet 7. It is prescribed for the recovery phase in acute nephritis and remission of chronic nephritis, nephropathy in the pregnant. All foods are taken without salt. Fish, mushrooms, cocoa, coffee are excluded. Liquid is limited up to 1 l a day. Food is taken 5-6 times a day.

Diet 7a. It is used up to 5-6 days in acute nephritis and in chronic nephritis with chronic renal failure. It is a vegetarian food with limitation of fibers and salt exclusion. Caloric content is reduced up to 2000-2400 kcal, the contents of vitamins is increased. The amount of taken liquid should be calculated according to the urine excretion during

the previous days. Food is taken 5-6 times a day. Coffee, cocoa, strong tea are excluded.

Diet 7b. It is used in the same diseases, as in the menu No 7a, but on the 6-7-th day boiled meat and fish are added. The amount of salt is 2-3 g per day.

Diet 7c. It is used in the nephritic syndrome. Liquids, sodium chloride, extractive substances, cholesterol, the oxalic acid are significantly limited, sugar is limited as well, and the amount of lypotropic substances is increased. Cooking is done without mechanical sparing. Meat and fish are boiled. Food is prepared without salt. The feeding regimen is 5 - 6 times a day. Before going to bed kefir is given.

Diet 7d. It is prescribed in a terminal (final) stage of the renal failure, in hemodialysis, i.e. purification of blood of a patient with the help of "an artificial kidney". The purpose is a provision of the balanced feeding in case of the severe renal failure and side effects after hemodialysis. Food is prepared without salt, bread is saltless. In case of absence of arterial hypertension and hypostases a patient is given 2–3 g of sodium chloride. Products containing potassium are limited. A sufficient amount of irreplaceable amino acids is provided with meat, fish, eggs and dairy products. Cooking is done without mechanical sparing; meat and fish are boiled. The taste of dishes is improved with sauces, spices, citric acid. Temperature of dishes is usual. Food is taken 6 times a day.

Diet 8. It is used in obesity. The amount of carbohydrates, fats (especially animals' fats) is reduced, and the amount of fibers is increased. Liquid, salt, the dishes that raise the appetite are limited. Salt is given in the amount of 5 g a day. Food is taken 5-6 times a day. Such drinks as tea, coffee, juices, except grapes are allowed. Lemonade, flavouring condiments are excluded. There must be special days of the limited intake of food (apple, dairy, cottage cheese, meat, vegetable, etc.).

Diet 9. It is used in diabetes. Carbohydrates and fats are moderately reduced, fibers are increased. Sugar, sweets (they are replaced with xylitol, sorbite), grape juice, lemonade are excluded. The use of vitamins is increased.

Diet 10. It is given in cardiovascular diseases without signs of heart failure. Fats, salt (up to 5 g a day), the amount of liquids (up to *1* l

a day) are limited. Food is taken 5-6 times a day. Fat dishes, salty snack, alcohol, chocolate, beans are excluded.

Diet 10a. It is used for the limited time (no more than 4 weeks) in cardiovascular diseases with clinically obvious heart failure. Salt and liquids are significantly limited. Food is prepared without salt. Fat dishes, spicy and salty dishes, coffee are excluded.

Diet 10c. It is used in atherosclerosis of the arteries with the primary coronary arteries disease, cerebro-vascular disease, myocardial infarction in a stage of scarring, arterial hypertension. The purpose is to prevent the progression of atherosclerosis, decrease body mass in obesity. The products that are rich in cholesterol and vitamin D are excluded. But the products having lipotropic action; vegetable oil with high content of polynonsaturated fat acids; vegetables, fruits and berries as natural sources of vitamin C, besides they contain vegetative cellular tissue; sea products that are rich in iodine – are all included into the diet. Salt is limited as well as free liquid up to 1000-1200 ml. Food is taken 5-6 times a day in the moderate quantity, supper is taken 3 h before going to bed.

Diet 11. It is used in pulmonary tuberculosis, anemia, in exhaustion. The amount of fats is in full volume. The use of fibers, carbohydrates, vitamins, calcium and iron is increased. Caloric content is 3300-6800 kcal. The food is taken 5 times a day. Fat meat, poultry, spicy sauces, cakes with plenty of cream are excluded.

Diet 12. It is used in diseases of the central nervous system accompanied by the increased nervous excitability; in a transition period from the 10-th diet a balanced diet. Salt is limited, the quantity of vitamins is increased. The dishes causing superfluous gas production are excluded. Food is taken 5-6 times a day.

Diet 13. It is used in acute infectious diseases in the febrile period. The amount of fats and fibers in a diet is limited, the caloric content is reduced, and the use of vitamins and liquid is increased. Rough cellular tissue, salty, fat, spicy dishes and spices are limited. Such drinks as fruit and berry juices, broth of a dogrose, morses, tea with lemon are allowed. Food is taken 8 times a day, by small portions.

Diet 14. It is used in a kidney-calculus disease and pyelocystitis with the urinal alkaline reaction, in phosphaturias. Vegetables like potatoes, carrots, cabbage, berries are limited, the amount of fats is

increased up to 120 g a day. The amount of liquid is 2-2,5 l per day, salt - 12-15 g per day. The food is taken 4-5 times a day. Dairy products, salads, canned food, fruit and berry juices – are excluded.

Diet 15 (a common table). Indications: all diseases in the absence of the prescribed special diet, it is given to patients without signs of failure of gastrointestinal tract organs. A diet is physiological, contains double quantity of vitamins and doesn't include fat meat. Salt is given 12-15 g per day.

Unloading (fasting) diets

In cardiovascular, gastrointestinal, renal diseases, on a basis of the main medical diet 1-2 times a week for 1-2 days fasting diets are appointed. The purpose is to limit the intake of food, to facilitate the functions of the organs and the systems to promote the discharge from an organism of products of the disordered metabolism. The prevalent food components in the unloading diets are subdivided into protein (dairy, cottage cheese, meat - vegetable), carbohydrates (fruit, sugar-vegetable), fatty (cream, sour cream), combined (consisting of various products) diets.

Dairy diet. It is used in cardiovascular diseases, heart failure, arterial hypertension, obesity, liver and gall bladder diseases, pyelitis and pyelocystitis. In this diet milk, kefir or curds in the amount of 200-250 ml is given every 2,0 - 2,5 hours 6 times a day (in the total of 1,2-1,5 l). The famous diet of Karell is well known. This diet was offered in 1865 by the doctor Karell and was used in a complex treatment of cardiac and renal diseases with the help of skim milk (0,8-3 l a day) with confinement to bed. According to the classical variant of this diet, during the first week a patient is given 200 ml of skim milk 4 times a day; later dried bread crumbs are added with the following use of the ordinary mixed food. Nowadays different modifications of the Karell diet are used. They are used with different additives to a daily ration (e.g. an egg, saltless bread, fruit juice, etc.).

Cottage cheese diet. It is used in severe heart failure, chronic nephritis with edema, but without azotemia, in obesity. It consists of 500 g of cottage cheeses and 150 g of sugar, 1-2 glasses of broth of a dogrose. It is given in 5 equal parts in 2-2,5 hours five times a day.

Apple diet. It is used in obesity, arterial hypertension disease, cardiosclerosis, chronic nephritis, chronic pancreatitis. Apples are taken

5 times a day by 250-300 g of ripe crude apples (1,25-1,5 kg in the total). In chronic enterocolitis with diarrhea - 5 times a day by 250-300 g of crude grated apples peel- and seeds-free are given. Caloric content of a diet us 500 - 600 kcal.

Compote diet. Indications are the same as for Apple diet. 6 times a day one glass of the compote cooked from 200 g of dried fruit, 60-70 g some sugar with 1,5 l of water is given. Caloric content - 750 kcal.

Dairy-potatoes diet. It is given in chronic nephritis with edema and azotemia, heart failure, diseases with acidosis. It is prescribed up to 2-6 days. 1 kg of potatoes, 0,5 l of milk are included. Salt is excluded. Caloric content - 1200-1300 kcal.

Raisins diet. Indications are the same as for diary-potatoes diet. It is prescribed for one day and consists of 0,5 kg of seedless raisin. It is given 5-6 times a day with equal portions.

Tea diet. It is recommended in gastritis with secretory insufficiency, enterocolitis. It is given up to 1-2 days. 7 glasses of sweet tea with 10-15 g sugar on a glass are given per day.

Meat and vegetable diet. It is given in obesity. It consists of 350 g of cooked beef, 0,6 kg of vegetables (cabbage, cucumbers, carrots). The food is taken 6 times a day.

Water-melon diet. It is used in nephritis, gout, kidney-stone disease with uraturia. Give 300 g of water-melon 5 times a day.

Now *The Order of Ministry of Health of the Russian Federation* dated August, 5, 2003 “About the measures on the improvement of dietetic therapy in treatment-and-prophylactic establishments of the Russian Federation” authorizes the new nomenclature of medical diets – *the system of standard diets* which includes 5 *types*.

The types of standard diets are not based on the basic nozological forms (by diseases), as it was before, but they depend on the mechanical and chemical sparing, the amount of fiber and caloric content.

1. *The basic type of a standard diet* includes diets number 1, 2, 3, 5, 6, 7, 9, 10, 13, 14 and 15. Indications : remission of chronic gastritis, peptic gastric and duodenal ulcer in remission, chronic intestinal diseases with constipation, acute cholecystitis and acute hepatitis in the recovery stage, chronic hepatitis with mild liver function failure, chronic cholecystitis and gall bladder calculus disease, gout, renal calculus disease, diabetes mellitus of 2nd type without obesity,

cardiovascular diseases with mild heart failure (arterial hypertension, ischemic heart disease, atherosclerosis (cerebral and peripheral vascular diseases), acute infectious diseases, fever.

2. *The type of a diet with mechanical and chemical sparing* (diets 1б, 4б, 4в, 5п). Indications: exacerbation of peptic and duodenal ulcer, acute gastritis, mild relapse of chronic gastritis with high acidity, reflux esophagitis, impairment of functioning of the chewing device, acute pancreatitis, severe exacerbation of chronic pancreatitis, the recovery phase after acute infections, after operations (not on the internal organs).

3. *The type of a diet with the increased amount of fiber* (a high protein diet) (diets 4, 5, 7в, 7г, 9, 10, 11). Indications: condition after stomach resection kept for 2-4 months, suspicion on stomach ulcer in the presence of a dumping - syndrome, cholecystitis, hepatitis; chronic enteritis with marked impairment of functional state of gastointestinal tract, remission of chronic pancreatitis, the nephritic type of chronic glomerulonephritis without renal failure, diabetes of 1 and 2 types without accompanying obesity and renal failure, rheumatism with mild activity without heart failure, tuberculosis of lungs, putrifactive processes, anemia, burns.

4. *The type of a diet with the low amount of fiber* (a low protein diet - diets 7а, 7б). Indications: chronic glomerulonephritis with acute and moderate renal failure.

5. *The type of a diet with the low caloric content* (a low-calorie diet - diets 8, 9, 10с). Indications: various degrees of alimentary obesity in the absence of marked complications of the gastrointestinal and vascular diseases, and also the diseases demanding special diets; diabetes mellitus of 2nd type with obesity, cardiovascular diseases with obesity.

Alongside with the basic standard diet and its types according to a structure of treatment-and-prophylactic establishment there are surgical diets (a diet 0, a diet at ulcer bleeding, at stenosis of a stomach and so forth), unloading diets and special diets (potassium diet, magnesian diet, diets in a heart attack, myocardial infarction, feeding through a probe, diets at unload-dietary therapy, a vegetarian diet and so forth). In Order of MH the Russian Federation there are daily average sets of products depending on variant of a diet.

Diet in medical institutions

The general management of feeding in treatment-and-prophylactic institution is carried out by the head physician, and in his absence - the assistant of the head physician. Dietarian is responsible for the organization of dietetic therapy and its adequate application in all wards of treatment-and-prophylactic institution. He supervises dietary nurses and controls the cooking process. In case of the absence of such post the dietary nurse is in charge.

Dietetic therapy is prescribed (or cancelled) by a doctor, who indicates a number of a diet in the chart and in the prescriptions sheet. Then in the afternoon a charge nurse takes information and makes two copies of a calculator list.

Sample of a calculator list:

Date	Patient's Surname	Ward number	No of the diet	Additional food
1.01.05	Smith Jane	No 7	No 4	100 g of meat
…	…	…	…	…
Total: the Diet № 1 - … the Diet № 4 - … …				
The signature of a ward nurse … … … … ….				

In the morning a nurse hands over one copy of a calculator list to the head nurse of the department, other copy is given to junior nurse-barmaid.

The head nurse on the basis of received calculator's lists makes daily ration requirement, signs it herself, takes a signature of the head of the department, then transfers the daily ration requirement to the cooking blick. The requirement is filled for 1-2 days forward, including patients admitted to the department up to the noon.

Sample of daily ration requirements:

The DAILY RATION REQUIREMENT on "___" _____ 2004 _____ department Patients to be enlisted on the feeding _____						
Diet No	1	5	9	…	Individual menu	In the total
Quantity of patients						
The signature of the head of the department … … … The signature of the head nurse … … … … …..						

Dietarian and a diet nurse of medical institution are in charge of dietetic treatment.

The duties of the dietarian include correct composition of medical diets, control over their correct implementation, and the advisory help to doctors in optimal assignment of a dietary menu, the control of the menu, observation over the technology of cooking the dietary dishes, their quality and chemical compounds.

Diet nurse's duty is to control the work of the cooking block and to observe over fulfillment of sanitary and hygienic norms.

Distribution of food from cooking block is carried out strictly on time assigned for each department and begins only after a doctor on duty in a hospital takes the probes of the food. The barmaid places tanks with food on special mobile little tables and delivers them in dinning room for patients. In the dining-room the dishes and large boilers for hot water are kept. It is possible to warm up food, in case of need.

After delivery of food to department according to calculator lists and daily ration requirement, its distribution by the barmaid, junior nurse and nurse in charge is performed.

If a junior nurse before distribution of food took care of patients (helped to perform a morning washing, was engaged in cleaning of wards, etc.), she should change her clothes and wash her hands carefully. Separate dressing gowns with special marks "for distribution of food" should be given to the medical personnel.

Patients on usual regime have a meal in a dining-room where they sit according to dietary menu.

After feeding the tables must be cleaned, after supper they must be washed with hot water and soap. Dishes must be washed twice with hot water with mustard or soda, obligatory disinfected with 0,2% lime chloride solution, rinsed with hot water and put in drying cases. Waste food products must be put into the marked closed buckets or tanks.

The patients, who are staying on a ward regimen, have food in the ward. The food is transported to the wards on special wheelchairs.

Seriously ill patients are fed by a nurse and junior medical personnel. Distribution of food by attendants who clean hospital rooms (junior nurses-cleaners) is strictly prohibited.

Feeding of patients

Depending on a way of reception of food by a patient there are following forms of a feeding:

1) an active feeding (the patient eats independently),

2) a passive feeding (the patient accepts food with the help of a nurse),

3) artificial feeding (feeding of the patient by special nutritious mixtures through a tube or a probe (gastric or intestinal) or by intravenous infusion - parenteral feeding, or by nourishing enema).

Passive feeding

At the strict bed regimen, weak and seriously ill patients, patients of elderly and senile age and also in case of necessity, are fed by spoon by the medical nurses. At passive feeding it is necessary to elevate a head of the patient with a pillow by one hand, and by another - to bring to his mouth a feeding-cup with liquid food or a spoon with meal. It is necessary to feed with small portions of food, leaving the patient time on chewing and swallowing; liquids are given with the help of feeding-cup or from a glass by a special tubule.

The Order of the performance of procedure:

1. To air a room.

2. To clean the patient's hands (to wash up or wipe with a damp, warm towel), to put a clean napkin on a neck and a breast of the patient.

3. To place dishes with warm meal on a bedside-table, to sit a patient comfortably (sitting or half -sitting). At a strict bed regimen it is necessary to raise by one hand a head of the patient with a pillow, and by another - to bring to his mouth a feeding-cup with liquid food or a spoon with meal.

4. It is necessary to feed the patient with small portions of food, leaving time on chewing and swallowing.

5. To give liquids with the help of a feeding-cup or from a glass by a special tubule.

6. To remove dishes, a napkin (an apron), to help the patient to rinse a mouth, to wash up (to wipe) his hands, to lay the patient in a starting position.

Artificial feeding

Artificial feeding usually means feeding of the patient enterally (from Greek entera - intestines), i.e. by gastrointestinal tract, and parenterally (from Greek. para - near + entera - intestines) – without gastrointestinal tract inclusion.

Enteral feeding

Enteral feeding is a kind of nutrition therapy used when it is impossible to provide an adequate maintenance of power and plastic needs of the organism in the natural way. Thus nutrients are entered through a mouth or through gastric tube. Not long ago rectal way of introduction of nutrients was used - rectal feeding (introduction of food through a rectum). In modern medicine such type of feeding is not used as it is proven, that fats and amino-acids are not taken by rectum. However in some cases (for example, dehydration due to vomiting) introduction of a so-called physiological solution (0,9% sodium chloride solution), glucose and other substances is possible. Such method is called "medical (nutritious) enema".

The organization of enteral feeding in treatment-and-prophylactic institutions is carried out by a team of nutritious therapy (Latin "nutricium"- a feed) including doctors-anesthesiologists - reanimators, gastroenterologists, physicians and surgeons, who had special training on enteral feeding.

The main indications: tumours, especially in the region of head, neck and stomach; deterioration of the central nervous system, comas, impairment of cerebral circulation; radio- and chemotherapy; gastrointestinal tract diseases - chronic pancreatitis, ulcer active colitis, etc.; diseases of a liver and bilious ways; a feeding in pre- and the postoperative states; trauma, burns, acute poisonings; infectious diseases (botulism, tetanus etc.); mental disorders - psychological absence of appetite, severe depression, etc.

The main contra-indications: intestinal impassability, acute pancreatitis, severe forms of malabsorbtion (Latin "malus" - bad, "absorption" - absorption: impairment of digestion of one or several nutrients in a small bowl), gastrointestinal bleeding; shock; anuria (at

absence of immediate replacement of kidney's functions); presence of a food allergy on components of the prescribed nutritious mixture; severe vomiting.

Depending on duration of enteral feeding and preservance of function of various parts of gastrointestinal tract there are following ways of introduction of nutritious mixtures:

1. The use of nutritious mixtures drinks through a tube by small portions.

2. Feeding with the help of nasogastral, nasoduodenal, nasojejunal and two-channel probes (for aspiration of gastroenteric contents and intraintestinal delivery of nutritious mixtures, mainly for surgical patients).

3. By installing of stomas (Greek "stoma" - an aperture: the external fistula created by operative way): gastrostomas (an aperture in a stomach), duodenostomas (an aperture in a duodenal gut), jejunostomas (an aperture in a lean gut). Stomach can be installed by surgical laparotomy or by endoscopy.

There are some ways of enteral delivery of nutrients:

1) by separate portions (fractionally) according to the prescribed diet (for example, 8 times a day by 50 ml; 4 times per day by 300 ml);

2) by slow prolonged infusion;

3) automatically adjusting food delivery with the help of special dozator.

For enteral feeding liquid food (a broth, mors, a dairy mix), mineral water, homogenous dietary canned food (meat, vegetable) and the mixtures balanced according the contents of fibers, fats, carbohydrates, mineral salts and vitamins are used.

The nutritious mixtures used for enteral feeding

1. The mixtures providing early restoration of small bowel function on provision of homeostasis and maintenance of water-electrolyte balance of an organism: "Citroglucosolan", "Gastrolit", "Orasan", "Rehidron".

2. "Element chemically exact" nutritious mixtures for feeding of patients with the marked impairment of digestive function and obvious metabolic disorder (liver and renal failure, a diabetes mellitus, etc.): "Vivonex", "Travasorb", "Hepatic Aid" (with the high contents of the so-called ramified amino acids - valyne, leycine, isoleycine), etc.

3. "Half-elemented balanced" nutritious mixtures (as a rule, they also include a full set of vitamins, macroelements and trace elements for feeding the patients with digestive dysfunctions): "Nutrilon Pepti", "Reabilan", "Peptamen" etc.

4. The polymeric well balanced nutritious mixtures (artificially created nutritious mixtures containing optimum proportions of all basic nutrients): dry nutritious mixtures "Ovolact", "Unipit", "Nutrison" etc.; liquid, nutritious mixtures ready to the use "Nutrison Standart", "Nutrison Energy" etc.

5. Modular nutritious mixtures (a concentrate of one or several macroelements and trace elements) with the purpose of enrichment of a daily diet of the person: "Albuminous Aenpit", "Phortogen", "Diet-15", "Atlanten", "Peptamin", etc. Distinguish protein, power and vitamin-mineral modular mixtures. These mixtures are not used as isolated enteral feeding of patients because they are not balanced.

The choice of mixtures for adequate enteral feeding depends on character and severity of disease, and also on preserved functions of a GI tract. So, at normal requirements and preservance of functions of a gastrointestinal tract there are prescribed standard nutritious mixtures, at critical and immunodeficiency conditions - nutritious mixtures with high contents of biologically active fiber, enriched with trace elements, glutamine, arginine and omega-3 fatty acids, at renal failure - nutritious mixtures with the contents biologically high valuable fiber and amino acids. At nonfunctioning intestines (intestinal obstruction, severe forms of malabsorbtion) parenteral feeding is used.

Parenteral feeding

A parenteral feeding is carried out by intravenous infusion of preparations. The main indications: a mechanical obstruction of passage of food on different level of GI tract (tumor, burns, postoperative stricture); preoperative preparation of patients for large operations, the

exhausted patients; postoperative patients (after operations on GI tract); burns; sepsis; gross blood loss; impairment of digestion in GI tract (cholera, dysentery, enterocolitis, disease of operated stomach and so forth), non stopping vomiting; anorexia and denial of food.

For parenteral feeding the following kinds of nutritious solutions are used: fibers (albuminous hydrolisates solutions of amino acids: Vamin, Aminosol, Aminosterill, Polyamin etc.), fats (fatty mixes: Lipofundin,Intralipid, etc.), carbohydrates (10% glucose solution, as a rule, with addition of microcells and vitamins), donor blood, plasma, plasma substitutes.

There are 3 basic kinds of parenteral feeding:

1. Full (all nutrients are entered through a vascular access; the patient does not drink even water).

2. Partial (incomplete) - the basic nutrients (for example, fibers and carbohydrates) are used only.

3. Auxiliary - feeding through a mouth insufficient and in addition introduction of some nutrients is required additionally.

The high dozes of a hypertonic solution of glucose (10% solution) irritate peripheral veins and can cause their inflammation (phlebitises), therefore they are delivered only through the central veins (subclavicular vein) or through permanent catheter which is placed with careful aseptic and antiseptic precautions (see chapter “Ways of application of medical products”).

CONTROL QUESTIONS

1. Importance of a diet in the treatment of a patient.
2. Daily need (requirement) of a healthy person in nutrients.
3. The organization of feeding in medical establishments.
4. Ways of patient’s feeding.
5. The basic dietary menu, its main characteristics.
6. Concept about the days limiting the intake of food (contrast diets).

UNIT 3
Theme 1. NURSING THE PATIENTS WITH ALIMENTARY TRACT DISEASES

Goal: to get a notion about the fundamentals of human physiology of the digestive organs, the main symptoms of digestive diseases and pathogenesis of their origin; to master practical skills.

Knowledge objective:

- to know the rules of patient’s preparation for the X-ray and endoscopic examination of the stomach and the intestine;
- to be able to render the first premedical aid in vomiting.

Skill objectives:

- to master the skills in vomitory masses collection for the laboratory examination, in gastric lavage, gastric juice fractional examination, duodenal intubation perfomance.

Subject-matter:

1) anatomical and physiological characteristic features of the gastrointestinal tract;

2) the main symptoms of digestive organs diseases;

3) medical care in vomiting, gastric lavage technique, patient’s preparation for the gastric and small intestine X-ray examination, gastric fractional intubation and duodenal intubation.

Equipment required: an Essmarch’s irrigator, a rubber tube (length 1,5 m, diameter – 1 cm.), a tube-tip made of thick-walled rubber, ebonite or plastic with a rounded intestinal end no less than 15 cm in length, a thermometer for the liquid temperature taking, 50-250 ml syringe, a Zane’s syringe, thick and thin gastric tubes, a duodenal tube, an oilcloth apron, a 10 l basin, a bucket, vaseline, water.

EDUCATIONAL MATERIAL

The majority of patients, who seek for a medical advice and are admitted to the in-patient department (surgical or therapeutic) are patients with digestive diseases, such as chronic gastritis, gastric and

duodenal ulcers, pancreatitis, colitis, hepatic and biliferous tract diseases, etc. Disturbances of the gastrointestinal tract are among the most common human diseases. About 40% of population of the industrially developed countries suffer from these diseases. Problems of constipation appear in the elderly both in the patients with gastrointestinal tract diseases and diseases of other systems and organs. Nowadays contemporary instrumental methods of examination (X-ray, endoscopic, ultrasonic, etc.) are widely used in the diagnosis of the digestive tract diseases. The concrete choice of a diagnostic investigation method and a further tactical approach to a disease treatment depends first of all on the correct assessment of the main clinical symptoms of the disease, while the disease prognosis is conditioned to a large extent by the quality and competence of the patient's care.A source of nutritive substances necessary for human normal functioning is food. Owing to it the energetic consumption is covered and plastic processes are realized. Proteins, fats, carbohydrates, vitamins, mineral salts are delivered into an organism together with food. However, most of these substances cannot penetrate through cellular membranes and get into blood in the form they are contained in food. They have to be divided into simpler compounds, the process being realized in gastrointestinal tract during digestion.

Digestive apparatus fulfils the following functions:

Motor function consists in food movement through a gullet, a stomach and an intestine and withdrawal of the undigested residual food from the organism.

Secretory function – producing digestive juices (saliva, gastric, pancreatic, intestinal juices, bile) by the glandular cells. Juices contain enzymes, decomposing proteins, fats and carbohydrates to simpler chemical compounds - amino acids, glycerin, aliphatic acids and monosaccharide. Mineral salts, vitamins and water get into blood without any changes.

Excretory function is realized by means of metabolic products withdrawal– biliary pigments, urea, ammonia as well as drugs and heavy metals' salts.

Gastric endocrine function. Gastric cells secrete gastrin - a stimulating hormone, gastron - hormone inhibiting main glandules activity, and pepsinogen into blood.

Absorptive function is realized by the gastric and especially intestinal mucous membrane.

The main symptoms of alimentary tract diseases

Digestive tract diseases are studied in the internal diseases section called gastroenterology. One of the main symptoms of digestive tract diseases is pain. There are peritoneal pains (when peritoneum covering digestive organs is involved into a pathological process) and visceral pains (in disturbance of digestive tract motor function – spasm, tension, atony). Peritoneal pains are usually persistent, sharp, acute, aggravating in body movements. They are followed by a strong abdominal wall tension. Visceral pains are of the spasmodic, dull, spread character. Abdominal pains occur not only in gastrointestinal diseases. Decision concerning medication of abdominal pains rests with a doctor.

Pains in gastroenterologic diseases may be followed by different dyspeptic disorders: nausea, regurgitation (discharge of food pieces or gases from the stomach into oral cavity), vomiting, loss of appetite, constipation, diarrhea, meteorism (abdominal distention). However, these disorders can occur without any pain.

Medical care in vomiting

During vomiting a patient is seated or laid down on his side, his head is bent down, a basin is placed on the floor and a tray or a towel is brought to a corner of a patients' mouth. After vomiting the patient is asked to rinse his mouth (in a severe case a mouth of a patient is cleaned with a cotton, soaked with water or unsaturated solution of Potassium permanganate), then is put to bed and covered with a blanket. In detecting blood in the vomitory masses a patient is not allowed to drink or to take drugs and food perorally, an ice bag is applied to the epigastric region, a pulse is watched (frequency, filling), blood pressure is taken, and doctor is called.

Collection of vomit masses is performed in every vomiting in order to determine the amount and content for further laboratory examination. A 2 l glass vessel with a broad neck, graduated side and a closing lid is mostly convenient for the purpose. Vomitory masses are

stored until doctor's arrival, who takes a decision concerning their sending for the laboratory examination.

Gastric lavage

Gastric lavage removes the content from the stomach by its mixing and evacuating with water, introduced through a gastric tube. A procedure is performed with diagnostic and therapeutic purposes.

Device for a gastric lavage is 0,5–1 l glass funnel, connected with a thick gastric tube (1 cm in diameter and 1,5 m in length) with a mark which is 40 cm distant from a tube blind end. A clean tube is boiled beforehand and put into cold boiled water before the procedure. Gastric lavage is performed with 10-12 l of +20º +30ºC water.

Gastric lavage with a thick gastric tube is based on a siphon principle[1] - the principle of communicating vessels. One of these vessels is a stomach, another one is a funnel, inserted into a free (external) end of a thick gastric tube. For the siphon principle to be realized it's necessary to watch the air not to get into a funnel (i.e. the water should not completely leave the funnel neck, otherwise the principle of communicating vessels will be broken).

Gastric lavage is performed with as a first aid in acute poisoning with drugs, mushrooms, alcohol, poor-quality food etc., in gastric pyloric stenosis (narrowing) and uremia (renal insufficiency).

In home conditions gastric lavage consists of a patient's drinking of 4-8 glasses of water, and then making him vomit by pressing down the tongue root or irritating pharyngeal posterior wall. This procedure is repeated several times.

Diagnostic gastric lavage is performed in suspicion of carcinoma of the stomach (atypical tumoral cells can be detected in washing waters).

Sometimes gastric lavage is performed with a thin gastric tube, introduced through a nose. Then Zhane syringe is used for water forcing and drawing off gastric content.

[1] The same principle is used in performing intestinal lavage with an enema, called a siphon enema.

Preparation of a patient for the gastric and small intestine X-ray examination

X-ray methods (roentgenoscopy – X-ray direct observation; roentgenography – X-ray filming and analysis of prints) make it possible to study the pathology of the alimentary tract better. By means of this method it is possible to determine a shape, location and relief of the gastric and duodenal mucous membrane. Gastric and intestinal X-ray examination is performed with the use of radiopaque substance (suspension of 100 g of barium sulfate in 100 ml of boiled water). A suspension is taken internally directly before the examination.

The aim of a patient's preparation for the examination is a gastric and intestinal maximal release from their content (food remains, liquid, gases). For three days before the examination a patient should not eat food producing many gases (rye bread, milk, potatoes, etc.) For supper a patient is allowed to have tea, white bread, defatted curds. To reduce gas-formation a patient is given 1 glass of camomile tincture for 2-3 days (1 table spoonful for a glass of water) or 2 pills of carbolen 3-4 times a day. On the eve in the evening and in the morning of the examination day a patient is given a cleansing enema. It's better to perform a gastric X-ray examination in the morning on an empty stomach (a patient is not allowed to drink and to smoke).

Method of fractional examination of gastric content

This method of examination is carried out by inserting a tube for getting gastric content to define an amount and composition of gastric juices, gastric secretory and motor functional state to reveal pathological admixtures in the gastric content.

To evacuate gastric content a thin gastric tube is used. It's length is 1-1,5 m, the external diameter is 4-5 mm, the internal diameter is 2-3mm. It has two oval openings on a blind end, inserted into the stomach. It has three marks: the first mark (45 cm) is the end of a tube situated in the cordial gastric section, the second mark (60 cm) is in the gastric sinus region, the third mark (75 cm) is near the pylorus. For a total gastric juice evacuation the end of a tube should be situated in the gastric sinusal region (mark 2). After the introduction of a tube (the

same method as in gastric lavage), a syringe or a vacuum installation is joined to its external end, and all the gastric content is evacuated. It is a portion on an empty stomach. Then during an hour a basal portion is received (examination of fasting gastric secretion), dividing gastric content into 4 portions, taken every 15 minutes.

After the basal portion evacuation an irritator is introduced to get a *stimulated portion* of the gastric juice. Different irritators (peroral or parenteral) are used.

Enteral (peroral) test-breakfasts (warmed up to 38°C) are: 300 ml of 7% dry cabbage decoction (according to Leporsky), 200 ml of meat broth (according to Zimnitsky). In a peroral irritator residue of the test-breakfast is evacuated in 25 minutes, and then four portions of stimulated secretion are got during an hour (within every 15 minutes).

Parenteral test-breakfasts: histamine and pentagastrin. Histamine dihydrochloride is introduced subcutaneously (0,01 mg/kg of a patient's weight or 0,1 ml of 0,1% solution per 10 kg of a patient's weight). Pentagastrin can be used instead of histamine (0,025% solution) – 6 mkg/kg of a patient's weight (pentagastrin, in contrast to histamine, does not cause any side effects). In the parenteral irritator 4 portions of the gastric content are evacuated every 15 minutes during the next hour – it is a stimulated portion. After that the tube is extracted from the stomach and the procedure is over.

Duodenal intubation

This examination of the duodenal content is performed to determine both normal components (gall, pancreatic and intestinal juice enzymes) and pathological (leucocytes, microbes, different parasites) components of the duodenal contents.

For intubation a special (duodenal) tube is used not less than 1,5 m in the length, 5 mm in the external diameter, it has 3 round marks at a distance of 45 cm (gastric entrance part – cordial, cardia), 70 cm (gastric exit part – pylorus), 80 cm (duodenum – at the level of the major duodenal papilla, Vater's papilla) from the inserted end. There is a metal olive with openings at the inserted end.

The intubation is carried out on an empty stomach, in a patient's sitting posture. A sterile tube is first put into warm water. Olive is

deeply put on the root of the tongue, and a patient swallows it. With the help of active gulps and deep inhalation, a tube is moved to the stomach. To prevent vomiting a patient is offered to breathe deeply. As soon as the olive passes through a gullet and gets into the stomach (1st mark of the tube – 45 cm), a patient is laid down on the left side and gastric content is sucked out with a syringe. Then a patient should slowly walk in the room and gradually swallow a tube. Gastric peristaltic contractions move a tube olive to the gastric exit part - up to the second mark of a tube (70 cm). After that the patient is laid on the right side. A hot-water bottle is put on the hepatic projection area (under right hypochondrium), a pillow or a soft bolster is put under a patient's pelvis so that a lower part of a trunk is elevated. In this position a patient slowly swallows a tube up to the third mark (80 cm) for 20-30 minutes. A free tube end is put into the first test-tube. A test-tube rack is placed on a low bench at the head of a patient's bed. As soon as an olive gets into the duodenum – a duodenal gall, a transparent amber-coloured liquid with alkaline reaction begins to excrete from the tube. In a long olive delay before a gastric pylorus, a patient is given to drink 30 ml of warm solution of 10% sodium carbonate.

Intubation may be carried out with two methods: a classical one (with examination of 3 biliary portions – A, B, C) and a multimomental fractional one (examination of 5 phases of bile secretion).

Classical method of duodenal intubation (examination of bile portions)

1st portion – A portion (duodenal, choledochoduodenal bile). Duodenal bile excretes independently. 15-40 ml of clear golden-yellow bile is usually received for 20-30 minutes. Duodenal bile consists of pancreatic juice, bile and duodenal mucous membrane secretion.

2nd portion – B portion (cystic bile). For this purpose it's necessary to cause the Oddi's sphincter opening and a gall-bladder contraction. This is achieved by the introduction of gall-bladder contracting stimulators (40 ml of Magnesium sulfate 33% solution, 50 ml of 10% sorbitol) through a tube. It is possible to introduce intravenously more active substances– cholecystokinin (75 ED in 10 ml of isotonic sodium chloride solution) or pituirin intramuscularly (5 ED),

causing a gall-bladder considerable contraction. After an irritant introduction a tube is compressed with a clip for 2-3 minutes, then it (a clip) is taken off and B-bile is collected. B-bile portion is thick, dark-olive (brown), transparent. It exudes easily within 20-30 minutes, 50-60 ml of bile is excreted for this period.

3rd portion – C portion (hepatic bile). Gradually cystic bile begins to brighten and obtains a golden-yellow color. This portion is secreted from the hepatic ducts. A period of secretion is 20-30 minutes, an amount is about 15-40 ml. After collecting a C portion, a tube is removed.

Multimomental fractional method
(bile secretion phase examination)

After tube introduction into the duodenum 4 biliary fractions corresponding to definite phases of bile secretion are collected (bile is collected into separate test-tubes every 5 minutes).

Phase 1 – phase of the time of the common bile duct (choledochal) begins from the moment of a tube getting into the duodenum and lasts till an irritator introduction. In a healthy person this phase lasts 20-30 minutes, 15-40 ml of golden-yellow bile is secreted within this period.

Phase 2 – phase of the Oddi's sphincter closing begins from the irritator introduction till the new golden-yellow bile portion appearance. Normally it lasts 4-6 minutes.

Phase 3 – secretion of the golden-yellow content of cervical biliary duct and of a gall-bladder neck in a period from an Oddi's sphincter opening till the B-bile appearance. Phase duration is 3-4 minutes, 3-5 ml of bile is collected.

Phase 4 – B-bile secretion. It begins with dark-brown B-bile appearance. Normally 50-60 ml of bile is secreted for 20-30 minutes.

Phase 5 – hepatic bile secretion. It's with the appearance of golden-yellow bile from the hepatic ducts and the liver. 15-20 ml of bile is secreted for a20-30 minutes.

After the 5-th phase completion a tube is removed.

PRACTICAL SKILLS

Gastric lavage

1. To seat a patient in a long oilcloth apron on a chair, to put a basin on the floor.

2. To remove all foreign bodies from a mouth (chewing-gum, dental prosthesis) before a procedure.

3. To stand to the right from a patient, to take a wet tube into a right hand within 10-15 cm from its rounded end, to introduce it into an open mouth, to put a tube end on the root of the tongue, to ask a patient to make a swallowing motion and to move a tube into a gullet at the same time.

Figure 20. Gastric lavage.

4. To ask a patient to do several deep inhalations and simultaneously to move a tube deeper – up to a 40 cm mark from the tube head end (at cough, take a tube out and reinsert it).

5. If it's impossible to insert a tube, to use a special method: to insert your forefinger into a patient's pharynx as deep as possible, press the root of the tongue and to insert a tube near a forefinger.

6. To connect a tube end with a funnel.

7. To hold a funnel on the level of patient's knees (quite often gastric content begins to excrete testifying the tube right position), to

bend it a little, to fill with water (figures 20 & 21, position 1 – a funnel filling), and to lift it slowly higher than a patient's mouth for 25 cm (figure 21, position 2)

8. As soon as water sinks down up to the opening, i.e. to the funnel neck (but water shouldn't completely leave a funnel), it's necessary to sink a funnel down up to a patient's knees level and wait until the funnel is filled with gastric content (figure 21, position 3); when the funnel is filled with gastric content, pour it out into a basin (figure 21, position 4).

9. To repeat this procedure up to "clean water".

10. To disconnect a funnel, to put out a tube quickly, to wash a tube and a funnel with a strong water stream and to put them into disinfectant solution at the end of the procedure.

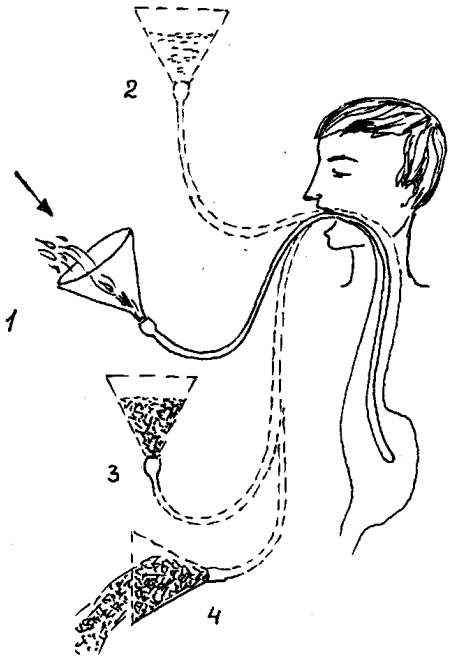


Figure 21. Funnel location scheme in gastric lavage.

Diagnostic gastric lavage

1. A procedure is carried out on an empty stomach, a tube is introduced by means of the above described method.

2. To connect a 20 ml syringe filled with a sodium chloride physiological solution with the external end of an introduced tube.

3. Physiological solution is introduced into the stomach and then is sucked out with a syringe. Introduction and sucking out of the same solution is repeated several times in order to wash out as much mucus from gastric walls as possible.

4. Washing waters are poured into a clean vessel and are sent for an examination.

5. If a patient is unconscious, a tube is introduced through a nose, using a thin small diameter tube.

Fractional examination of gastric content

1. To introduce a thin gastric tube (the method is the same as in gastric lavage).

2. To connect a syringe with a tube external end and evacuate all the content – it is a portion on an empty stomach.

3. To get a basal portion for an hour –to evacuate all the gastric content every 15 minutes.

4. To introduce an enteral (peroral) or parenteral irritator after receiving a basal portion:

- in the use of enteral (peroral) irritator for 25 minutes to evacuate the first portion of the gastric content in 10 minutes, then to evacuate all the gastric content in 15 minutes (i.e. to evacuate a test-breakfast residue), after that to receive 4 portions of the stimulated secretion (pure gastric juice) every 15 minutes during an hour;
- in the use of parenteral irritator, to inject histamine subcutaneously (0,01 mg per kg of a patient's weight or 0,1 ml of 0,1% solution per 10 kg of a patient's weight (pentagastrin can be used instead of histamine– 6 mkg/kg of a patient's weight); for the next hour to evacuate 4 portions of gastric content every 15 minutes – that is a stimulated portion.

To evacuate a tube from the stomach, to send signed and numbered containers with the obtained content to a laboratory. Thus the procedure is completed.

Duodenal intubation

1. To perform the intubation to a patient on an empty stomach in a sedentary posture in a special ward.
2. To put a duodenal tube olive deeply on a tongue root, to offer a patient to swallow it.
3. To move actively a tube into the stomach with every gulp, to ask a patient to breathe deeply to prevent vomiting.
4. To lay a patient down on the right side (without a pillow) and by means of a syringe to evacuate the gastric content (gastric peristaltic motions move a tube olive to the duodenum till the second mark of a tube – 70 cm) when an olive passes a gullet and enters the stomach the first mark (45 cm).
5. To put a hot-water bottle on the hepatic projection region and to put a bolster so that a lower part of the body is elevated. In this position a patient slowly swallows a tube till the third mark (80 cm) within 20-30 minutes.
6. To put a free end of a tube into a test-tube (to place a rack with test-tubes on a low bench near a patient's bed head). To give a patient 30 ml of 10% warm natrium hydrocarbonate solution in an olive delay before a pylorus.

Classical method of duodenal intubation
(examination of biliary portions)

1. A portion collection. Duodenal bile discharges independently. It is sufficient to collect 30 ml of bile, which usually excretes for 20-30 minutes and has a golden-yellow colour.
2. B portion collection. To introduce through a tube 40 ml of 33% solution of Magnesium sulfate or 50 ml of 10% sorbitol solution, or to introduce intravenously cholecystokinin (75 ED in 10 ml of isotonic sodium chloride solution) or pituirin intramuscularly (5 ED). To tighten a tube with a clip for 2-3 minutes after an irritant introduction, then to

remove a clip and collect the bile. B-portion bile is dense, dark-olive (brown), transparent, excretes for 20-30 minutes. 50-60 ml of bile is collected within this period.
3. C portion collection. The bile begins gradually to brighten and gets golden-yellow. The excretion duration is 20-30 minutes, its amount is 15-20 ml. To remove a tube after C-portion collection.

CONTROL QUESTIONS

1) What is referred to dyspeptic disorders?
2) Name the methods of gastric tube introduction.
3) What does the siphon effect consist of in gastric lavage?
4) What irritators are used to obtain a stimulated portion of gastric juice in gastric fractional intubation?
5) Describe two methods of duodenal intubation.
6) Functions of the digestive system.
7) The difference between tubes for gastric and duodenal intubation, peculiarities of their structure.
8) What are the indications for gastric lavage?
9) Describe a consecutive approach in rendering the first premedical aid to a patient in vomiting.

UNIT 3
Theme 2. NURSING the PATIENTS WITH INTESTINAL DISEASES

Goal: to get a notion about the basic symptoms of intestinal diseases and methods of the first pre-medical aid.

Knowledge objective:

- *to know* anatomical and physiological peculiarities of intestine structure, pathogenesis of occurring of the basic symptoms and peculiarities of general care for the patients with intestinal diseases.

Skill objectives:

- *to be able* to perform a current disinfection on admission of patients with contagious intestinal diseases, to insert a flatus tube and to give an enema (cleansing, siphon, etc), to give a first aid in case of

intestinal bleeding, to prepare a patient for roentgenological investigation as well as to get a skill of collecting the stool for analysis.

Equipment required: a flatus tube, an ice-bladder, a bedpan, Esmarch's irrigator, a thick gastric tube, glass funnel, a rubber colonic bulb, an oilcloth, a basin. Place: a study room, a ward and a sanitary room (an enema room).

Subject-matter:

1) anatomical and physiological peculiarities of intestine;

2) the basic symptoms and the first aid in case of intestinal diseases; rules of performing of current disinfection on admission of patients with contagious intestinal diseases;

3) the basic characteristics of excrements, collecting of stool for analysis;

4) rules of giving cleansing, siphon, oil, saline and medicinal enemas.

EDUCATIONAL MATERIAL

The area of small intestine's absorption surface is about $2x10^8$ cm^2 and about 240 g of enterocyte mass takes active part in regeneration processes. Such injuring factors, like poor diet, intoxication, circulation disorders (including system of microcirculation), ecological influences (radiation), etc. play a great role in digestion processes disorders. All this makes ground to the development of pathological processes (active inflammation, immune processes, etc.). Therefore it is a matter of great importance to know the basic symptoms, peculiarities of care for patients and methods of the first pre-medical aid in case of occurring of intestinal diseases. And it's necessary to remember, that diseases of small intestine and large intestine develop much more frequently, then have clinical manifestations.

Anatomical and physiological peculiarities of intestinal structure

Intestine is 7-8 m long and consists of two parts: a small intestine (duodenum, jejunum and ileum) and a large intestine (cecum with vermiform appendix, ascending colon, transverse colon,

descending colon, sigmoid colon and rectum). There is an ileocaecal valve or valve of colon between small intestine and large intestine. Rectum is finished with anal sphincter.

The basic functions of intestine are digestive, absorptive and motor. Intestinal digestion goes under the influence of pancreatic and intestinal juice and bile and ends with the formation of substances which can be absorbed. In intestinal digestion and formation of some vitamins a bacterial flora of intestine takes part.

Small intestine has a great endocrine importance. A center of intestinal endocrine system is duodenum. Enterochromophylic (endocrine) cells of digestive canal have special name: APUD-system (APUD - amine content, precursor uptake, decarboxilation). These cells produce *enterogastron*, which inhibits n. vagus and gastrine influence on secretic and motor functions of the stomach; *secretin*, which stimulates pancreatic secretion of alkaline juice; *cholecistokinine*, which cause gallbladder contraction; *motilin*, which activates motor function of the stomach and intestine; etc.

Absorption of amino acids, monosaccharides, oily acids and soaps takes place in small intestine, and only water is absorbed in large intestine. Motor function of intestine expresses mostly by pendulum-like movements due to which food gets mixed up, and by peristalsis movements, which move intestinal contents toward large intestine. Movement of intestinal contents through small intestine takes 3 - 4 hours, through large intestine – 17 - 24 hours.

Basic symptoms of intestinal diseases and first premedical aid

Intestinal colic – brief, frequent, sudden (like labor pains) pain attacks, which are felt in different parts of intestine, followed by meteorism and relieve after the passage of gases. A special type of intestinal colic is tenesmus (греч. teinesmos - a false urge) - painful and frequent urges to defecate with excretion of some mucus, blood or pus. These unproductive urges to defecate are caused by a spasm of muscles of rectum, its anal sphincter and appear at inflammatory processes in intestines - dysentery, ulcerative colitis, proctitis and also at rectal tumors and anal fissures.

In case of stomach pains, pain killers and hot-water bottles should not be used until a doctor finds out the reasons of these pains, because

these interventions can complicate diagnostics and even do harm to the patient.

Diarrhea is a pathological condition, which declares itself as a dysfunction of intestines with an increase of liquid content in stool (about 90%) and daily excrements mass as well as increase of defecation‘s frequency. Diarrhea arises as a result of motor and secretory dysfunction of intestine. The irritation of a mucous membrane causes intensive peristalsis, and food debris, that have not been digested and soaked up, move fast through the intestinal tract and leave it. If diarrhea is a symptom of inflammation of mucous membrane of intestines, there are different admixtures in liquid excrements.

In case of small intestine inflammation (enteritis), excrements are liquid, plentiful, yellow-greenish, defecation is 3-6 times a day. In case of large intestine inflammation (colitis), stool is more frequent up to 15 times a day with small portions with mucus and blood.

General care of the patients first of all includes keeping body, bed and linen clean. A patient should use not a lavatory pan but a bedpan or pot so that the doctor could examine excrements. After every defecation patient’s anal area should be washed with a mild disinfecting solution.

Diarrhea often is a manifestation of infection, so people, who take care of a patient, must perform current disinfection until the causes of the disease are found.

The patients should be given a separate room or a light part of a common room with separate bed and bedclothes, with only necessary things left; there should be a rag soaked with disinfecting solution on the doorstep.

Such patient’s crockery must be separated, kept and washed separately from other dishes with hot water, soap and soda and boiled for 15 minutes once a day.

Patient’s excrements and urine in the basin should be strewn with chloride lime in proportion of 1:2 for an hour, and then poured out to the lavatory. The remains of food are disinfected the same way.

After disinfection personal basin or bedpan should be kept on removable bench or on a sheet of paper which is frequently changed and in case of contamination – burned down.

Items of care must be treated daily by washing and boiling for minimum 15 minutes.

Dirty linen of a patient should be gathered separately into the closed tank and before washing boiled in soap and soda solution for 15 minutes; linen contaminated with defecation should be rinsed under running water and kept in dry chloride lime for one hour.

Patient’s room and places of common use should be cleaned damply (moistly) 2-3 times a day: floor should be washed with hot water with soap and soda, door handles, lavatory pan and a toilet floor should be washed with disinfecting solution. For this purpose there should be a special bucket and rags, which are regularly washed, disinfected and boiled.

It is necessary to struggle with flies, which are infection carriers.

People taking care of patients should wear special gowns made of easy-washable fabric over their clothes and strictly follow the rules of personal hygiene: after cleaning up the room, disinfection of dishes, giving the basin (bowl) to the nurse they should wash their hands with soap and brush; in case of leaving the ward they should take contaminated gowns off and clean their shoes with disinfecting solution.

Constipation is an intractable or intermitting dysfunction of large intestine with the stool frequency decrease up to 3 times a week and with involuntary strains, which take over 25 % of defecation time. Constipation is a result of slowing down of intestinal evacuation, that leads to rare defecations with small volumes of dense excrements, sometimes as so-called "sheep’s stool". Constipation can arise without any disease of intestine, only as a result of wrong diet or starvation, dehydrating of the organism or use of easily digested food containing no vegetative fibers (cellulose), etc.

Hypokinetic constipation is a result of weakness of intestinal musculature and decreased irritability of an intestinal wall as well as the diseases of neighboring organs. Thus intestinal contents are delayed in the left part of the colon from 24 hours to a week.

Spastic constipation may also be an expression of general neurosis with the prevalence of parasympathetic nervous system tone. As a result of the delay of excrements in some part of colon, in the

preceding parts a putrefactive degeneration of protein substances takes place, which aggravates the intoxication and spasms.

Constipation can be caused by a mechanical obstruction at intestine or belly cavity tumors, at flexures, commissures, etc. At intestinal obstruction not only stool, but also gas retention takes place.

Patients who have to follow a strict bed regimen can have constipation caused by movements' deficiency.

Patients, suffering from constipation feel gravity and abdominal distention, pains and a feeling of incomplete bowel emptying. Absorption of putrefaction products dew to the constipation causes intoxication, which manifests itself in headaches, flaccidity and weakness.

Patients having constipations are regularly given laxatives and enemas according to the doctor's administrations.

Patients suffering from hypokinetic constipations may have accumulation of hardened excrements in rectum that have to be evacuated by fingers as in such cases enemas do not give any effect. For this purpose bedpan is used, a nurse puts on rubber gloves, vaselines fingers, inserts 1-2 fingers into the rectum, evacuates feces parts in pieces, afterwards gives the patient a cleansing enema.

Involuntary defecation arises as a result of disorders of nervous regulation of defecation act, in cases of nervous diseases or illnesses, followed by loss of consciousness (infections, cerebral hemorrhage (apoplexy), etc.). Fecal incontinence may be a result of local inflammatory, tumorous and traumatic diseases in the area of anal sphincter.

Patients with involuntary defecation are usually placed to a separate ward. A diet of such patients should contain high-calorific and easily available products. Having provided the organism needs, such food leaves minimum of waste for excrements formation. Every morning intestines of such patients are cleaned by means of an enema. These patients regularly lay on a rubber bedpan or on a specially equipped bed and require permanent care for body cleanliness by means of frequent intimate washings, rub-downs, changing of linen, etc.

Meteorism is an abdominal distention at excessive gas accumulation in intestines that manifests itself in causing to burst abdominal pains. Meteorism bothers patients mostly after operations on

a belly cavity and at diseases of peritoneum. At this condition, firstly a low carbohydrate diet is administered; secondly, 1 teaspoon of absorbed (activated) carbon 2-3 times a day or carbolen in tablets, chamomile and other herbs infusions are prescribed; thirdly, cleansing enemas are administrated – they stimulate not only feces, but also gas evacuation from intestines, thus bringing the patient a significant relief. If enema is undesirable or if it does not remove meteorism, a flatus tube having 40-50 cm of length and 5-10 mm of aperture diameter and a rounded end with two lateral apertures is inserted. A pipe with a previously vaselined end is inserted into the rectum to the depth of 20-40 cm, the external end is sunk into the bedpan, which is placed under the patient. In an hour the tube is carefully evacuated, the anus is washed by a wet cotton tampon and greased with ointment.

Intestinal bleedings arise at ulcers of gastro-intestinal tract (GIT), dysentery, typhoid fever, intestinal wall blood supply disturbance and at bleedings in connection with the diseases, accompanied with general hemorrhagic diathesis. Such patients develop the following symptoms: weakness, dizziness, tinnitus (ear noise), shortness in breath (dyspnea), syncopal conditions, significant skin paling, rapid weak pulse, and blood pressure falling.

Excrements at an intestinal bleeding look variously depending on the location of bleeding source and speed, with which blood moves through intestines.

At a duodenal ulcerative bleeding, blood penetration to intestines and gastric bleedings the stool becomes tarry (current jelly), because hemoglobin under influence of a hydrochloric acid of gastric juice during moving of blood along the intestine manages to turn into black hydrochloric acid hematine.

If the source of a bleeding is located lower, then blood transforms less, and at bleedings from dilated veins of the rectum at a hemorrhoid or from anal fissures unaffected blood gets mixed with normal feces.

The patient with an intestinal bleeding should follow a strict bed regimen. An ice-bag may be put on the belly of the patient. It is necessary to inform the doctor about bleeding and to show him the excrements. At a profuse bleeding from intestinal ulcers patients are not

given any food or drink for 1-2 days, and then mechanically and chemically sparing diet (table № 1a) is prescribed. It is necessary to struggle with constipation at hemorrhoid hemorrhage.

Under doctor's prescription parenteral haemostatic agents are used.

General characteristics of excrements

Excrements examination helps to diagnose some diseases, including gastro-intestinal ones. Health person's excrements amount depends on quality and quantity of food and in average is 100-200 g. If absorption is disturbed and a speed of chymus mass movement in intestines is increased (enteritis), the quantity of feces can reach 2500 g., though at constipation feces amount is very small.

Normally defecation occurs once a day, usually at the same time. Excrements density and form depends on water, fat and cellulose (fibers) contents. Normally feces have a sausage-like form and a middle density. At constipation feces becomes very dense, and at spastic constipation looks like firm balls - so-called "sheep's stool". At diarrheas feces is liquid with undigested particles of food and different admixtures: at cholera – rice-water stool with flakes of mucus, at typhoid fever - like a pea soup. If fermentive processes in intestine have prevalence, stool is crumbly and frothy.

Color of feces depends on bilious pigments presence. If bile does not get to intestines feces becomes pale-coloured. Color of excrements also depends on consumed food: dairy diet gives yellow feces; meat gives black-brown, green vegetables – greenish, beet and cocoa – red-brown, bilberry and currant – dark brown, liver and blood sausage – black. Some medicines also give excrements a special color: the activated coal, bismuth, iron – black, santoninum and rhubarb – brown or reddish.

Excrements smell depends mostly on the products of protein putrefaction. At mostly vegetative diet fermentation processes prevail and feces gets a sourish smell, at dairy diet feces is almost odorless, at tumor degradation – stinking putrefactive smell.

In excrements different admixtures: helminthes – ascarids, seatworms and parts of tapeworms; undigested pieces of food can be

in feces normally, usually there are vegetative food or cartilage pieces, etc. can be found. At disorders of fat digestion feces gets a brilliant, fatty; mucous can be mixed with feces if it comes from upper parts of intestines, and can be superficial of feces if it is from lower departments. At membranous colitis mucus can discharge as white dense tapes. At excrements examination big amount of pus can be found in mixture with mucus as it happens at dysentery when blood-streaked yellowish mucous limps are excreted; the stones which have got into the excrements from gallbladder and pancreas, can be found after attack of colic, when feces is washed out throw the sieve.

Enemas

The main purpose of enema – therapeutical influence, but they can also be used for diagnostic purposes.

Medical enemas are used for mechanical large intestine voiding (cleansing enemas), for enteroclysis of large intestine (siphon enemas) and medicinal influence on it, by introduction of water, medicines, nutrients in organism through the large intestine (medicinal, nutritient enemas).

Diagnostic enemas provide the possibility to judge the capacity of large intestine, to enter contrast substance for X-ray examination of large intestine .

There are two methods of introduction of liquid into the rectum: hydraulic (from the tank located above the level of body) and force enema (by forcing with appropriate instruments).

To perform a *cleansing (hydraulic) enema* one needs following items: the tank for an entered liquid (Esmarch's irrigator, glass funnel, a rubber bulb) with capacity from 1 up to 5 liters; the rubber tube conducting liquid about 1,5 meters of length and minimum 1 cm of diameter; the intestinal tip inserted into the rectum, made of different materials (thick-walled rubber, vulcanite (ebonite), plastic), with minimum 15 cm of length and a rounded intestinal end; thermometer for liquid temperature measurement (fig. 22). Between a rubber tube and a tip there is a special connecting tube with a valve for regulation of quantity of liquid introduced into the rectum (it is possible to use a clip regulating diameter of a rubber tube gap).

In average adult gets *1-2* l of boiled water of 12-42°C depending on a kind of constipation: at hypokinetic constipation - lower temperature, at spastic – higher, relaxing temperature. Usually water of 37°C with soap solution for strengthening of effects are used - 1 table spoonful of soap filing + 2 table spoonfuls of glycerin or vegetable oil.

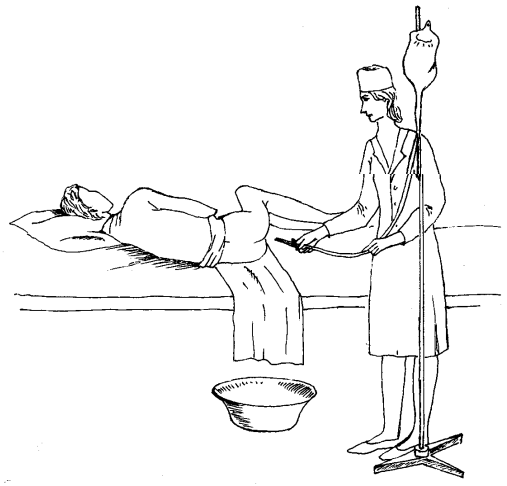


Fig. 22. Cleansing enema (hydraulic method).

Cleansing enemas are given at constipation, at poisonings of both external and internal origin; before operations, confinements and X-ray examinations of abdominal cavity and pelvis cavity organs as well as before medicinal, drip and nutrient enemas.

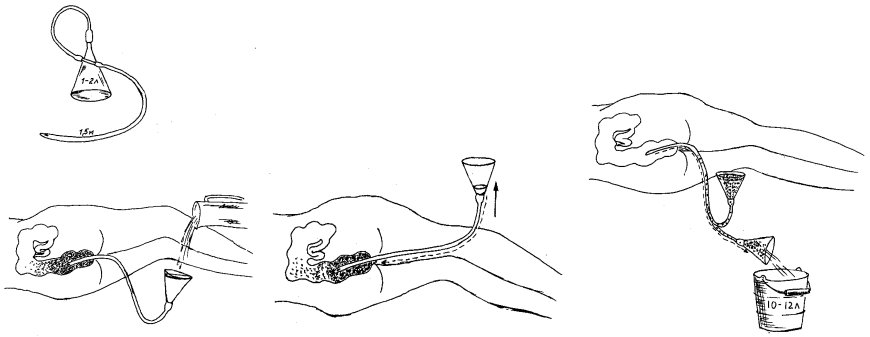
Contraindications for giving cleansing enemas are:

- acute inflammatory, putrefactive and ulcerative processes in anal area, in particular - acute appendicitis;
- inflammation of peritoneum (peritonitis);
- gastric and intestinal bleedings, in particular bleeding hemorrhoid and disintegrative cancer of large intestine;
- first days after operations on organs of abdominal and pelvis cavities;

- anal fissure and incompletely closed anus as well as rectal prolapse.

Liquid introduced with an enema provides mechanical, temperature and chemical influence both on peristalsis and defecation, and on feces, loosening them and stimulating their discharge.

Siphon enemas are the most optimal method of fast bowels cleansing, thus it is the most effective clarification of intestines, because intestine is washed out with water several times. Indications for siphon enema administration are absence of effect from cleansing enema and taking laxatives, preparation for operation on intestines, as well as poisonings, sometimes with the diagnostic purpose at suspicion on large intestine obstruction (at large intestine obstruction there are no gases in returning washing out waters).



A B C

Fig. 23. Siphon enema.

Cleansing of intestines by siphon enema is based on a principle of joint vessels. One of these vessels is intestine, another one – a funnel, inserted into the free end of a rubber tube, another end of which is inserted into the rectum (fig. 23, A).

To realize principle of a siphon, the funnel, filled with liquid, must be raised on 0,5 m above the body of the patient (fig. 23, B).

After the liquid gets into intestines (the level of decreasing water reaches narrowing - a mouth of funnel, but water should not leave the

funnel completely, otherwise the principle of joint vessels will be broken!), funnel is sunk below the patients body and they wait before it will be filled with contents of intestines (fig. 23, C). After that contents of funnel are poured out into the bucket or into the basin. Raises and descends of the funnel are alternated with each other. Liquid is added at each raising of a funnel. Such washing of intestines will be carried out until clean water discharges. If air gets into the tube procedure should be begun from the very beginning as it breaks realization of a siphon principle. Amount of discharged liquid should outnumber the entered volume.

Giving force enemas is made with help of special rubber bulbs 200-250 ml of volume with a dense intestinal tip (fig. 24) or a Janet's syringe, nowadays also complex force devices are used (Colongidromat).

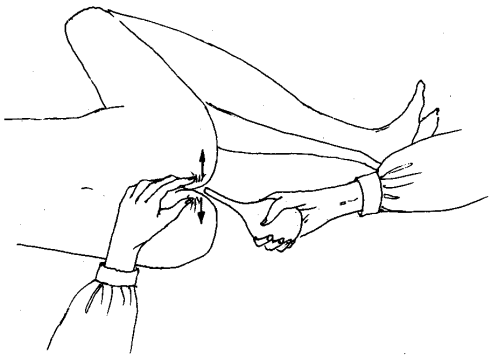


Fig. 24. Force enema (enteroclysis).

Oil enemas are adequate at spastic constipations and inflammatory diseases of large intestine. Usually vegetable oils (sunflower, linen, hempseed oils) or vaseline oil, that are warmed up to +37°+38°C in amount of 100-200 ml are used. For inserting a pear-shaped bulbs or a Janet's syringe with rubber tips at the ends are used. Oil is introduced slowly as it shouldn't run back, thus the patient should lay calm. Oil enema is usually given in the evening; clearing of

intestines comes in the morning in 10-12 hours. After use, the tools are washed out thoroughly with hot water with soda and boiled.

For *hypertonic enemas* hypertonic solutions (10% solution of sodium chloride or 20-30% solution of magnesia sulfas) are used. They are warmed (up to +37°+38°C) before inserting in quantity of 50-100 ml with the same tools, as oil. The patient should detain the solution in intestines (to refrain from defecation) for 20-30 minutes. Salts of hypertonic enemas, on the one hand, strengthen peristalses of intestine, on another - cause strong transudation (trans - through; sudo - to filter), infiltration of liquid into the gap of intestine (because of osmosis). All of it results in a plentiful liquid stool.

Medicinal enemas are used for introduction of big amounts (up to *2* l) of isotonic (0,85%) table salt solution or 5% glucose solution at desiccation, intoxication, before or after operations.

"Mikroclysters" are enemas with small amount of liquid (50-100 ml) introduced. At medicinal enemas medicines of general effect are introduced: preparations of foxglove, chlorhydratis, sodium salicylate, etc. For entering a pear-shaped bulb or a Janet's syringe with rubber tips is used.

Nutrient enema is used to introducing water, salt solutions and glucose into the organism. Other substances by means of nutritious enemas are not introduced, as in rectum and sigmoid intestine digestion and absorption of proteins, fats and vitamins does not occur.

Collecting of feces

It is necessary to have a bedpan, a glass jar, a rectal tube.

For a general examination of feces (corpological examination) all day's excrements are delivered in a laboratory, besides two days prior to research preparations of iron, bismuth, coal, salts of barium are canceled. To study feces on protozoa fresh feces is put into a glass jar, on pathogenic microbes - in sterile crockery.

For collecting excrements for bacteriological study (for example, fecal culture "on dysentery") special glass rectal loop (tube) which is inserted into anus on 5-6 cm when the patient in lateral recumbent position with semiflexed legs is used. By rotary movements of the tube with contents of rectum (feces) is taken out and put the same end of the

tube in a sterile test-tube with a preserving mixture. The material is delivered in laboratory urgently.

Fecal examination for latent blood marks is performed at stomach and duodenal ulcer, at cancer of stomach, at intestinal ulcers of tubercular and typhoid feverish origin, and also at other diseases when bleeding can be insignificant and impossible to define visually in feces. Previously a patient is prescribed a three-day dairy-vegetative diet without fruits, thus it is necessary to be sure of gums and nose bleeding and hemoptysis absence; within these days the patient should not clean his teeth with tooth-brush (to avoid receiving of false positive result).

Preparing the patient to radiological investigation of large intestine

This kind of investigation is carried out by method of irrigoscopy (irrigation - an irrigation, washing; skopeo - examine), also named contrast enema, when suspension of barium is inserted into the large intestine through the anus with an enema. A suspension of barium is prepared in proportion of 200 g barium and 10 g of tannin for 1 liter of water.

Diseases of the rectum and anal sphincter (inflammation, tumor, fistula, anal fissure) are contraindications to this examination. Rectal prolapse or anal sphincter asthenia owing to which a patient cannot keep liquid, introduced into intestines, makes this study impossible to carry out.

The purpose of preparing is complete clearing of large intestine from the wastes of food, liquid, gases, and mucus.

Preparation is begun 3 days prior to the examination - for this purpose an adequate diet with limitation of carbohydrates and cellulose consumption, exception of milk, rye bread, potatoes, vegetables, apples, grapes is appointed. It is recommended to consume liquid, easily absorbed and not irritating the intestines food: jelly, semolina, omelets, white bread, boiled meat, fish, etc. On the eve before dinner patient is given 30 g of castor oil. Taking salt laxatives is not recommended, as they irritate intestines and do not evacuate gases out. In the evening before the research a patient is given a cleansing enema twice with an interval of one hour. A patient does not have supper. In the morning 3

hours before the examination the patient is given a light breakfast to cause reflex movement of contents of small intestine in large intestine. Immediately after the breakfast the patient is given the first, and then in half an hour the second cleansing enema. 30-40 minutes prior to examination the patient is entered a flatus tube.

PRACTICAL SKILLS

Giving a cleansing enema

Equipment: *1-2* l of warm water, Esmarch's irrigator, a tip, a support for hanging up the irrigator, a liquid temperature measuring thermometer, an oilcloth, a basin, a bedpan, gloves.

1. To inform a patient about an administered manipulation. Bedridden patients are is given an enema in a ward, on free regime - in a toilet.
2. To wash your hands thoroughly with soap under warm running water, to put on mask and gloves.
3. To fill the Esmarch's irrigator with boiled water or with liquid with definite structure and temperature. According to doctor prescription for strengthening of effect it is possible to add "a soap solution": 1 table spoonful of soap + 2 table spoonfuls of glycerin or vegetative, castor, vaseline oils.
4. To hang up on a support the Esmarch's irrigator at a level of 1 m above a body of the patient.
5. To open the tap, to fill tubes (long rubber and connecting) with water to avoid air. To close the tap.
6. To put an oilcloth on the bed, to put a free end of the oilcloth in a basin in case the patient cannot keep water.
7. To lay a patient on the left recumbent position at the border of the bed and to suggest him to bend his knees, to move them to the stomach to relax the abdominal press.
8. If movement is contraindicated for the patient, to give him enema in a dorsal recubitus position of the patient, in this case to put a bedpan under the patient.

9. To vaseline the tip. To move the buttocks apart with a left hand, to enter the tip firstly in the direction of the novel on 3-4 cm, secondly in parallel to coccyx on 7-8 cm long.

10. To open the tap a little, watching for that water should not get into intestines too quickly as it can cause pain.

11. If water does not gets to intestines, to lift the Esmarch's irrigator higher and-or to change position of a tip, getting it back on 1-2 cm. If water still does not gets to the intestines, to take the tip out and to change it (as it can be blocked up with excrements).

12. To close the tap and to take the tip out, having pressed the right buttock of the patient to left, so that the liquid does not get out from the rectum, and to suggest the patient to detain whenever possible a desire of defecation during 5-10 minutes after the procedure.

Giving siphon enema

Equipment: 10-12 liters of clean warm water, glass funnel for 1-2 liter, a rubber tube 1,5 m of length and minimum 1 cm of a gap diameter, connecting and intestinal tubes (instead of intestinal tube a thick intestinal probe can be used), a jug, a basin, an oilcloth, gloves.

1. To inform a patient about an administered manipulation.
2. To put an oilcloth on a patient's bed.
3. To put a basin near to bed for pouring water off and a jug with a liquid.
4. To lay the patient on the border of the bed, on the left recumbent position, with bent and led knees for relaxing of the abdominal wall.
5. To vaseline the end of an intestinal tube and anus.
6. To insert an intestinal tube into anus on 30-40 cm long.
7. To keep the funnel in the inclined position (so that air was not sucked in) in a little bit higher of a body of the patient, to fill it with water.
8. To lift slowly the funnel on height of 1 m above the patient's body level.

9. As soon as the level of decreasing water reaches the mouth of a funnel, to lower it above a basin, without overturning.
10. To wait until the water with the washed particles of intestinal contents will return to a former (initial) level.
11. To pour out contents of funnel into a basin.
12. To repeat the previous 5 manipulations (not allowing the air to be sucked in intestines with water) until the "clean water" will be going out.
13. To take out an intestinal tube slowly.
14. To wash up the funnel and tube and to boil them.

Giving oil, hypertonic enemas

Equipment: a rubber bulb or a Janet syringe, flatus tube catheter, vegetable oil (100-200 ml), hypertonic solution, a basin, an oilcloth with wrap, gloves, vaseline, containers with disinfectant solutions.

1. To inform a patient about an administered manipulation, to explain the patient his actions during the manipulation.
2. To wash your hands thoroughly with soap and warm running water.
3. To put on a mask and gloves.
4. To take warm oil (a hypertonic solution) in a Janet's syringe or a bulb.
5. To remove from container with the solution the rests of air.
6. To lay the patient on the border of the bed, on the left recumbent position, having bent his knees and led them to stomach for relaxing of abdominal press.
7. To vaseline flatus tube and anus.
8. To move buttocks apart and to enter flatus tube (catheter) into the rectum on 10-15 cm.
9. To connect the tube and the bulb (or a Janet's syringe).
10. To enter oil (a hypertonic solution) slowly.
11. To disconnect the bulb (a Janet's syringe) and flatus tube (catheter).
12. To remove through a napkin flatus tube from the rectum carefully.

13.To close buttocks firmly.

14.To ask the patient about his state.

15.To ask a patient to remain lying within several hours (better on a stomach), otherwise the oil entered into intestines will flow out. After oil enema defecation comes in 10-12 hours. After hypertonic enema the patient should try to lay within 20-30 minutes (after hypertonic enema defecation of intestines comes in 20-30 minutes).

16.To clean the used material in 3% chloramine solution and to soak for 60 minutes in the same solution.

Collecting of feces for general examination

Equipment: clean, dry glass container, wooden spatula, matches, slips, stick, containers with a disinfectant solution, gloves.

1. To inform a patient about an administered procedure, to explain him technique of collecting feces.
2. To give the patient a container for collecting of feces.
3. To put on gloves, to put just excreted feces with spatula into the container, not touching its borders.
4. To close a container firmly.
5. To burn the spatula.
6. To clean gloves in 3% chloramines solution, to take them off and to soak the same solution for 60 minutes.
7. To fill in a slip and to stick it to the container.
8. To send the material in laboratory.

Collecting of feces for examination for eggs of worms

Equipment: clean, dry glass container, wooden sparer, matches, slips, stick, containers with disinfecting solution, gloves.

1. To inform a patient about an administered procedure, to explain him technique of feces collecting.
2. To give the patient a container for collecting feces.
3. To put on gloves.

4. To take just excreted feces with spatula from three different places on a surface and put it in container, not touching its borders.
5. To close container firmly.
6. To burn the spatula.
7. To clean gloves in 3% chloramine solution, to take them off and to soak for 60 minutes in the same solution.
8. To fill in a slip and to stick it to container.
9. To send the material in laboratory.

Collecting latent blood in feces for examination

Equipment: clean, dry glass container, wooden spatula, matches, slip, stick, containers with a disinfectant solution, gloves.

1. To inform a patient about the examination for 3-4 days.
2. To ask a patient to exclude products with the high contents of iron: meat (including liver, kidneys), a string beans, peas, white dried mushrooms, buckwheat, tomatoes, black currant, etc. from his diet.
3. To ask a patient not to take medicines containing iron, do not clean his teeth with tooth-brush during 3-4 days before research, and rinsed his mouth with 3% solution of sodium of bicarbonate.
4. To explain him the technique of collecting feces.
5. To give the patient a container for collecting feces.
6. To put on gloves.
7. To put just excreted feces with spatula into a container, not touching its borders.
8. To close a container firmly to prevent oxidation and drying of feces, to burn the spatula.
9. To clean gloves in 3% chloramine solution, to take them off and to soak for 60 minutes in the same solution.
10. To fill in a slip and to stick it to container.
11. To send the material in laboratory.

Taking feces for bacteriological examination

Equipment: a special test tube with a preservative (for example, with " English mixture" - glycerin + ammonium alcohol), closed by a cotton-gauze tampon, in which rectal loop (a core with a metal loop) for taking material is assembled; an oilcloth with wrap, slip and stick, container with a disinfecting solution, gloves, a mask, a support for test tubes.

1. To inform a patient about prescribed procedure.
2. To put on gloves; to suggest the patient to lie on the left side, having led his knees to stomach.
3. To take a loop from a test tube, handling it only for an external surface of a cotton-gauze tampon, close a test tube thoroughly.
4. To move apart buttocks with left hand and to enter the loop in anus for 4-5 cm with carefully rotary movements, then to remove the loop from rectum carefully.
5. Not touching the borders and an external surface of the test tube, to sink the loop in it.
6. To close the test tube with preservative thoroughly, thus the loop should be completely dipped in the solution. To put test tube in a support for test tubes, then the support – into a drum.
7. To clean gloves in 3% chloramine solution, to take them off and to soak for 60 minutes in the same solution.
8. To fill in the slip and to stick it to container.
9. To send the taken material in laboratory (as soon as possible, but not later, than in 1 hour after taking the material).

Application of flatus tube

Equipment: a sterile tray, sterile flatus tube, sterile vaseline, an oilcloth, wrap, a bedpan, a mask, gloves.

1. To inform the patient about planned manipulation.
2. To put an oilcloth with warp on the bed.

3. To put a bedpan on a chair near the patient, filled with water for 1/3 of volume.
4. To lay the patient on the left side, to suggest him to bend his legs and to lead them to abdomen.
5. To make sure that a patient is comfortably laid.
6. To put on a gown, a mask, gloves.
7. To examine anus, to vaseline it plentifully.
8. To vaseline entering in anus end of flatus tube with vaseline during 10-15 cm plentifully.
9. To move apart buttocks with fingers of the left hand and to enter the tube on 20-30 cm carefully with rotary movements.
10. To sink the external end of the tube into a bedpan (for smell reduction).
11. To remove the tube from rectum carefully, using wrap in 1 hour (it is impossible to hold the tube longer as it can form bedsores in rectum).
12. To close buttocks carefully to avoid involuntary excretion of liquid feces.
13. To cover the patient, to air a ward.
14. To sink all used material in 3% chloramine solution.

SITUATIONAL TASK

Task. During inserting of medicinal enema after rectal introduction of a drug the patient felt strong urge to defecate and told a nurse about that. What was done wrong while giving the medicinal enema?

Answer: Before giving a medicinal enema the patient had to be given a cleansing enema.

CONTROL QUESTIONS

1. What are the basic functions of intestines?
2. What is intestinal colic?
3. What is diarrhea? What are its peculiarities at small intestine and large intestine diseases?

4. What are the measures of current disinfection on admission of the patients with intestinal diseases?

5. What kinds of constipation do you know?

6. What are the symptoms of gastroenteric bleeding?

7. What admixtures may appear in stool?

8. The rules of stool collecting for examination.

9. The technique of performing of cleansing and siphon enemas.

10. The technique of giving medicinal, oil and saline enemas.