

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ

До друку та в світ
дозволяю на підставі
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5020 Methodological instructions for practical lessons
**“The urgent help and the rules of care of patients with
diseases of the gastrointestinal tract”**

on the discipline “Nursing care”
(in accordance with the conditions of the Bologna process)
*for students of specialty 222 “Medicine”
of full-time training*

Усі цитати, цифровий і
фактичний матеріал,
бібліографічні відомості перевірені,
запис одиниць
відповідає стандартам

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MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
MINISTRY OF HEALTH CARE OF UKRAINE
SUMY STATE UNIVERSITY

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Department of Pediatrics

GET TO KNOW THE TERMS

Flatulence – bloating due to the accumulation of large amounts of gas in it.

Constipation – the absence of indigestion for more than 48 hours due to slow bowel movements.

Diarrhea – loose indigestion (diarrhea), occurs with increased intestinal motility and increased secretory function of the intestine.

Defecation – emptying of the distal intestine (large). Normally – once a day. The conditioned-reflex act is subject to the will of man.

Dysphagia is a disorder of the act of swallowing caused by an organic or functional obstruction in the way of the food lump in the esophagus.

Burping – the release of gas from the stomach through the esophagus and mouth with a characteristic sound.

Vomiting (also known as *puking, throwing up, barfing, emesis*, among other names) is the involuntary, forceful expulsion of the contents of one's stomach through the mouth and sometimes the nose

CARING FOR A CHILD WHILE VOMITING

During vomiting, the infant's head is turned to the side so that the vomit does not enter the airways and does not cause pneumonia. At the corner of the mouth, put a tray, or put a towel. The older child is asked to sit down, place the pelvis, and tilt her head forward. After vomiting, the child is given water; the older one is given mouthwash. Vomiting masses are kept in a closed container in a cool place until a doctor examines them. If there is a need for a laboratory test, they are poured into a jar with a lid; the name, age of the child, and the test's purpose are written on the label.

GASTRIC LAVAGE

Gastric lavage belongs to the most important treatment measures. It is carried out in patients of different age groups in order to remove different harmful substances from the stomach. With this aim a thick tube 70–100 cm long and 10–12 mm in diameter is used. In young children thinner tubes (3–5 mm in diameter) are used.

Gastric Lavage

Equipment:

- a gastric tube (its lower edge is closed and there are two holes on the side);
- two rubber aprons;
- a container with 20–22 °C water. The quantity of water depends on the age of the patient (approximately 1 liter per year of life; for teens — up to 6–8 liters);
- a basin for washing;
- a tray for equipment;
- a waste material tray;
- gauze sponges;
- a 20 ml syringe without a plunger for newborns; a 150 ml Janet syringe without a plunger for 1–2-year-old children; a 500 ml funnel for older children.

Essential condition: solution used for gastric lavage should be neither warm, nor cold, as far as warm solution may be easily absorbed through the gastric mucosa and cold one may cause gastric muscle spasm.

Preparation for the procedure:

- Acquaint the child (parents) with the course of investigation.
- Prepare the necessary equipment.
- Put on an apron.
- Wash and dry hands and don gloves.

Seat the child on the assistant's knees and fix him/her as follows: a) the child's legs are held with the assistant's legs; b) the child's head is fixed with the assistant's hand placed upon the child's forehead. To fix an infant better he/she may be swaddled in either a

cloth or a sheet. It is also possible to conduct gastric lavage in horizontal position of the child lying on his/her side.

- Put an apron on the child covering the assistant's hand.
- Put the basin for washing near the child's feet and put the apron's edge into it.

Procedure:

- Estimate the length of the tube necessary for introduction into the stomach. With this aim it is possible to measure the distance from the child's earlobe to the tip of the nose and the lower margin of the xiphoid or from the nasal bridge to the teeth and the lower margin of the xiphoid; it may be also calculated as $20 + n$, where n is child's age in years. The measured distance must be marked on the tube.

- Moisten the blind end of the tube with water.
- Open the child's mouth with the help of a spatula. A gag or tongue fixators may be used in case of necessity.

- Introduce the tube across the mid line of the tongue to its root and ask the patient to make some swallowing movements; continue introducing the tube through the esophagus into the stomach until you reach the mark; locate the tube behind the child's teeth. If the child starts coughing or suffocating (a sign of tube introduction into the respiratory tract), it is necessary to remove the tube immediately.

- Attach a funnel or a plunger-free syringe to the tube.
- Put the tube lower than the stomach level in order to avoid air getting inside and fill the funnel with water for washing.

- Gradually raising the funnel upwards it is necessary to control the passage of fluid into the stomach (water shouldn't descend lower than the level of funnel outfall).

- Descend the funnel fast and smoothly below the primary level and pour out the contents into the basin. Repeat the procedure until you get clear washing. It is necessary to see to it that the quantity of introduced and poured out fluid is equal. In case of severe attack of abdominal pain and/or appearing of blood in the washing the procedure must be immediately stopped.

- Detach the funnel and remove the tube with a fast movement. Put the tube onto the waste material tray.

Completion of the procedure:

- Rinse the child's mouth.
- Give the child to the mother to put him/her to bed.
- Disinfect all the tools, aprons, and mat from the couch.
- Remove the gloves, wash and dry hands.

APPLICATION OF THE VESSEL

Purpose: satisfaction of physiological discharge of the patient.

Indications: strict bed rest of the patient.

Preparing:

1. Screen (if the patient is in the general ward).
2. Oilcloth with a diaper or a moisture-resistant diaper.
3. Ship, better – two (can be rubber, enameled, plastic, faience).
4. Container for water or aseptic solution.
5. Water or aseptic solution, $t + 40^{\circ} \text{C}$.
6. Apron.
7. Mask.
8. Gloves.
9. Everything necessary for emptying urogenital organs. 1, 2, 3, 4 medical workers can perform manipulation. It depends on:
 - the severity of the patient's condition,
 - patient weight.

The nurse can perform the manipulation both at the patient's request and on the doctor's prescription, in connection with the toilet of the genitourinary system to perform other manipulations (catheterization of the bladder, etc.), after cleansing enemas in the patient's bed.

Prepare the patient:

- psychologically, calm down, create conditions for complete relaxation,
- be sure to fence off with a screen.

Sequence of actions:

1. Put on an apron, a mask.

2. Wash, dry your hands.
3. BE SURE to wear gloves. If necessary, invite assistants. Put oilcloth, diaper in advance, and put the ship on them!
4. Raise the shirt to shoulder level, lift the patient on both sides with the left, and the assistant with the right, with the hands brought under the patient's sacral area, pre-bend the child's legs at the knee.
5. With the right hand, bring the oilcloth and the vessel at the same time
6. Conveniently place the patient on the wide part of the vessel in the sacral region so that the patient's perineum is above the vessel (the vessel's handle should be between the patient's legs).
7. Fold most of the diaper into a plait and place it on the vessel's border and the back to prevent fluid from leaking onto the back because a wide part of the vessel bends even on a hard bed.
WARNING! If the patient is a boy, then, also, you must submit a urinal, as when urinating, he can soak the sheet and blanket, even with a sluggish jet.
8. Cover the patient and be nearby.
9. At the end of the act of defecation (excretion of feces from the rectum) and urination, if there are two vessels, then change one for the other in the same order as brought. If the vessel is one, remove it from under the patient, give it to the assistant or, if it is not there, put it on a bed stool (for an individual patient vessel).
10. Spread the diaper under the patient and place him on it. Take the vessel out, pour it into the toilet, rinse it, dry its outer surface and bring it back under the patient, having previously covered the part on which the patient was lying with a clean part of the diaper.
11. After a thorough toilet of the genitourinary system, remove the vessel and diapers at the same time.
12. Check for back or dry bed, straighten all creases on the bed.
13. Cover the patient, make sure that he is comfortable lying down, and have no requests.

14. Open a window (depending on the season and outside air temperature).

15. Soak all used material in disinfectant for at least 60 minutes.

Additional information:

Before feeding the vessel to the patient, be sure to pour water on the bottom to:

- reduction of odor during the act of defecation;
- easier departure of fecal masses from the vessel.

FLATUS TUBE ADMINISTRATION

Intestinal gas removal is usually carried out in young children. Peculiarities of the digestive tract structure and functioning, frequent intestinal dysbiosis and dietary violations lead to abdominal bloating (accumulation of a great quantity of gases inside the intestinal loops) and, as a result, abdominal pain. Flatus tube is used for intestinal gas removal.

Equipment:

- a flatus tube (15–20 cm long for young and preschool children and 30–50 cm long for school children);
- vaseline oil;
- a tray filled with water for gas discharge control;
- a waste material tray;
- rubber gloves and an apron;
- a mat, two cloth and a towel;
- a napkin.

Essential condition: absence of rectal fissures and acute inflammation. Preparation for the procedure:

- Explain the child's mother (relative) the aim and course of the procedure. Establish friendly relationship with her/him.
- Prepare the necessary equipment.
- Wash and dry hands, put on an apron and gloves.
- Make a mark on the flatus tube corresponding to the depth of introduction into the rectum: 5–6 cm for infants, 8–10 cm for 1–3-year-old kids, 10–15 cm for 3–7-year-old children, and 20–30 cm for schoolchildren.

- Cover the swaddling table with a mat and a cloth.
- Put one more cloth for drying the child after washing.
- Grease the flatus tube edge with vaseline oil.

Procedure:

- Put the child on his/her left side with flexed knees and hips not tightly pressed to the abdomen. The child younger than 6 months may be placed on the back with spread and slightly elevated legs.
- Part the buttocks of the child with the 1st and 2nd fingers of the left hand supporting the child in this position.
- Introduce the flatus tube's tip greased with vaseline oil into the child's anus with rotating and reciprocating motions directing it at first towards the umbilicus and then parallel to the coccyx to the mark.
- Putting the flatus tube tip into the tray with water it is necessary to check if gases are discharged (in case of gas discharge there are air bubbles in the water). If gases are not discharged, it is necessary to change position of the tube moving it forward and backwards.
- In case of unhampered gas discharge it is necessary to put the flatus tube's external end into the cloth.
- Massage the abdomen clockwise.
- Cover the child. Mark the time (the flatus tube is to be inserted for 20–30 minutes).

Completion of the procedure:

- Remove the flatus tube from the rectum, moving it through the napkin. Put the tube into the waste material tray.
- Wash the child, dry him/her with the towel, process his/her perianal zone with a sponge moistened with vaseline oil and dress him/her afterwards.
- All the tools, aprons and mat from the table must be disinfected.
- Remove the gloves, wash and dry hands.

GASTROSTOMY CARE

Purpose: to ensure a long stay of the gastrostomy at the site of its installation.

Preparing:

- sterile gloves;
- sterile tray for sterile cotton balls and napkins;
- tray for used material;
- lassar pasta;
- mask;
- adhesive plaster or cleol, sterile bandage;
- container with sterile tweezers;
- capacities with des. solution for the material used.

Patient preparation:

1. Inform the patient about the manipulation, time, and place.
2. Tell us about his behavior during the manipulation.

Sequence of actions:

1. Wash your hands according to the instructions, dry them, put on a mask, gloves.
2. Carefully remove the old bandage and place it in the tray for the used material from the des. solution.
3. With cotton balls soaked in alcohol, treat the skin around the gastrostomy, and apply Lassar paste.
4. Place napkins on top of the paste around the gastrostomy.
5. Secure the tube (gastrostomy) with a strip of adhesive tape or a gauze napkin.
6. Soak all used material and tools in a 3 % chloramine solution for at least 60 minutes.

Additional information:

The old bandage must also be soaked in a 3 % solution of chloramine.

In some cases, to prevent the loss of the gastrostomy tube, the latter is fixed with a bandage (around the patient's torso, tie a knot on the side, not under the patient).

TYPES OF ENEMAS.

ENEMA ADMINISTRATION RULES

Enema is the process of introducing a fluid or nutritive solution into the rectum with the aim of cleaning it. There are cleansing, nutritive and treatment enemas. All of them are prescribed by a doctor and given by a nurse.

Cleansing enema is prescribed in constipations, acute intestinal infections and poisoning, in case of preparation for operation, treatment procedures and diagnostic investigations (endoscopic and radiological ones). Enema stimulates intestinal peristalsis, providing laxative effect. Contraindications to this procedure include collapse, inflammatory processes in the large intestine, gastrointestinal hemorrhages, suspected appendicitis or peritonitis, period after operations on the abdominal organs and some other conditions.

It is recommended to use rubber pear-shaped balloons of different capacity depending on the child's age. Balloons used in pediatric practice have only soft tips. For a child of the first half year of life it is recommended to use 50 ml balloons, of the second half year of life – 100 ml balloons, 1–5 years – 180–300 ml balloons. School-children require larger volumes of water for cleansing enema (0.5–1 l) introduced with the help of an Esmarch cup. For cleansing enema in infants only boiled water is used. Temperature of water for cleansing enema in infants and young children makes 28–30 °C, in older children – 25–28 °C. In case of intestinal spasm the temperature of water should make 37–38 °C, in case of intestinal atony and fever – 20–22 °C.

GIVING A CLEANSING ENEMA to a Child of the First Year of Life. *Equipment:*

- rubber gloves and an apron;
- a mat and a cloth;
- a towel;
- a rubber balloon for enema (its volume depends on the child's age);
- a container with boiled water (the temperature of water corresponds to the child's age);

- vaseline oil;
- a waste material tray;
- a pot.

Preparation for the procedure:

- Explain the child's mother the aim and course of the procedure and receive her consent.

- Prepare the equipment.
- Put a mat and cover it with a cloth.
- Wash and dry hands, put on an apron and gloves.
- Take the rubber balloon with your right hand and remove

air from it.

- Rubber balloons of different size are used in infants and the following quantity of fluid (ml) is introduced:

- newborn — 25—30;
- 1–3-month-old child – 60;
- 3–6-month-old child – 90;
- 6–9-month-old child – 120–150;
- 9–12 months – 180.

- Grease the rubber balloon edge with vaseline oil.

Procedure:

- Put a 1–6-month-old infant on his/her back with spread and elevated legs. Place an older child on his/her left side with his/her legs flexed in the knee and hip joints.

- Part the buttocks of the child with the 1st and 2nd fingers of the left hand supporting the child in this position.

- Turn the balloon with water so that its tip is turned upwards and press on its lower part with the right thumb until air is completely removed from the balloon.

- Introduce the tip carefully into the anus not unclenching the balloon and move it into the rectum directing it towards the umbilicus first and later parallel to the coccyx.

- Gradually pressing the balloon over its bottom introduce water and remove the tip from the rectum not unclenching the balloon. Put the balloon into the waste material tray.

- Press the child's buttocks for 3–5 minutes.

- Put the child on his/her back covering his/her buttocks with a diaper until defecation or an urge for defecation appears. Seat a child that can already sit onto a pot.

Completion of the procedure:

- Wash the child after defecation, dry with a towel and dress him/her.
- Disinfect the apron and mat.
- Remove the gloves and put them into disinfectant.
- Wash and dry hands

Disposable industrially manufactured enemas are used nowadays. They provide laxative effect and produce fast intestinal cleansing in constipations and before diagnostic procedures on the colon. Different chemical remedies compose these enemas. Disposable enemas are handy, however, they can't replace common cleansing water enemas. In some cases they may cause allergic reactions in a child and other ones have age limitations. For example, Microlax may be used from infancy, Normacol – from the age of 3 years, and Norgalax – from 12 years.

Hypertonic, oil and siphon enemas belong to cleansing enemas as well. In modern conditions they are rarely used. Hypertonic enema is given for active stimulation of the intestines (in atonic constipations).

10 % NaCl solution (about 1 tablespoon of salt per glass of water) or 30 % magnesium sulfate solution is used with this aim. 20–100 ml of solution (depending on the child's age) is introduced with the help of a rubber bag. After the procedure the patient should lie during 20–30 minutes until the laxative effect of this enema is observed.

Oil enemas are given in prolonged persistent constipations. They are given with the help of a syringe with a rubber catheter put over it or a small rubber bag placed into a flatus tube; the catheter or tube are introduced into the rectum for 10–12 cm in order to hold the oil inside during some longer time. In most cases heated to 37–38 °C sunflower-seed oil (20–75 ml) is used. After this enema the child should lie on his/her abdomen during 20 minutes to prevent oil from coming out. Cleansing effect takes place 8–10 hours later. Oil

enemas with certain oils (sea-buckthorn or rosehip) given after previous cleansing of the intestines are a sort of medical enemas.

Siphon enemas are given for maximal cleansing of the intestines from fecal masses in poisoning, intestinal paresis and preparation to some investigations. These enemas are mainly used in older children. Before siphon enema a cleansing one should be necessarily given.

GIVING A SIPHON ENEMA

Equipment:

- rubber gloves and an apron;
- a rubber sheet, a cloth and a towel;
- a disposable siphon enema system and a 500 ml funnel for preschool children or a 1000 ml funnel for schoolchildren (Esmarch cup) with a rubber tube 1–1.5 m long and 0.5–1 cm in diameter with a tip;
- a flatus tube;
- a gauze napkin;
- a 3–5 l container with boiled water (35–36 °C);
- a waste material tray;
- a bucket or basin.

Essential condition:

– Siphon enema should be given 30–40 minutes after a cleansing one.

– In order to provide deep introduction of fluid the flatus tube may be used. Preparation for the procedure:

- Explain the mother (child) the procedure aim and course and receive their consent.
- Prepare the necessary equipment.
- Lay a rubber sheet with its edge put into a bucket or another big container and cover it with a cloth.
- Wash and dry hands, put on an apron and gloves.
- Connect the funnel with the rubber tube.
- Grease the flatus tube tip with vaseline oil.

Procedure:

• Place the child on his/her left side with his/her legs flexed in the knee and hip joints.

- Part the buttocks of the child with the 1st and 2nd fingers of the left hand supporting the child in this position.

- Tightly holding the free end of the flatus tube carefully introduce it into the child's anus and move forward for the recommended length directing it at first towards the umbilicus and then parallel to the coccyx.

- Attach the rubber tube tip with a funnel to the flatus tube. Fill the funnel pulled down beneath the bed with water and raise it 60–80 cm above the patient (water shouldn't go down below the level of the funnel) and pull it down into the bucket or basin for cleansing water.

- Repeat the procedure several times (8–10) until clear washing.

- Remove the flatus tube tip, moving it through the napkin (rubber tube, funnel and napkin should be put into the waste material tray).

- Leave the flatus tube inside the rectum for 15–30 minutes. Except for gases there will be some quantity of water coming from the intestines onto the cloth and rubber sheet through the tip.

- Remove the flatus tube from the anus, moving it through the cloth (the rubber tube, funnel and cloth should be put into the waste material tray). Completion of the procedure:

- Wash and dry the child's perianal area.
- Process the perianal area with a sponge moistened with vaseline oil. Dress the child.

- Disinfect the apron and rubber sheets.

- Remove the gloves off and put them into disinfectant solution.

- Wash and dry hands.

Medical enemas are divided into local enemas (used for colon inflammation treatment) and general enemas (through the intestinal mucosa medicines are absorbed into the blood). Medical enema is performed after cleansing one (30 minutes after) or after defecation. The medical substance volume depends on the child's age and makes 20–25 ml for children younger than 5 years, 30–50 ml for children of 5–10 years and 70–80 ml for children older than

10 years. With this aim rubber balloons of small volume (100 ml) or syringes with catheters are used. Medical solution should be heated to 40–41 °C providing its fast absorption and urge for defecation. Solutions of antiseptics (furacillin, potassium permanganate, antibiotics), herbal decoctions and plant oils are used with this aim.

GIVING A MEDICAL ENEMA

Equipment:

- rubber gloves and an apron;
- a rubber sheet, a cloth and a towel;
- a rubber balloon with a volume corresponding to the child's age;
- a flatus tube;
- a container with a medical substance;
- vaseline oil;
- a waste material tray.

Essential condition:

- Medical enema should be given 30–40 minutes after a cleansing one.
- Before introduction medical solution should be heated to 40 °C for its better absorption.
- It is recommended to use a flatus tube in order to provide deep introduction of the drug.

Preparation for the procedure:

- Explain the mother (child) the procedure aim and course and receive her consent.
- Prepare the equipment.
- Lay a rubber sheet and cover it with a cloth.
- Wash and dry hands and put on an apron and gloves.
- Heat medical solution and fill the rubber balloon in with it.
- Grease the flatus tube tip with vaseline oil.

Procedure:

- . Put the child on his/her left side with the legs flexed in the knee and hip joints and bent to the abdomen.
- Part the child's buttocks with the 1st and 2nd fingers of the left hand and fix the child in this position.

- Holding the free end of the flatus tube tightly carefully introduce it into the anus and move forward to the recommended length directing it at first towards the umbilicus and then parallel to the coccyx.

- Holding the rubber balloon with the drug with its tip turned upwards it is necessary to press it until air goes out.

- Connect the rubber balloon to the flatus tube. Gradually pressing on the balloon's bottom introduce the drug and separate balloon from the flatus tube previously squeezing its free edge. Put the balloon into the waste material tray.

- Remove the flatus tube (moving it through the napkin) from the anus and put it into the waste material tray.

- Press the child's buttocks with your left hand for 10 minutes.

- Place the child onto his/her abdomen and see to it that he/she stays in this position for 30 minutes after the procedure.

Completion of the procedure:

- Wash and dry the child's perianal area.
- Process the perianal area with a sponge moistened with vaseline oil. Dress the child.

- Disinfect the apron and rubber sheet.

- Remove the gloves and put them into disinfectant solution.

- Wash and dry hands.

MEDICAL MANIPULATION TECHNIQUES

Nutrient enemas are prescribed to a child who is unable to eat food through the mouth. Nutrients are introduced into the rectum which can absorb fluids. The use of these enemas is limited as far as in the lower colon only water, 0.9 % NaCl solution, glucose and alcohol solutions may be absorbed. Proteins and amino acids may be partially absorbed as well. Nutrient enema volume shouldn't exceed 200 ml. Cleansing enema is usually performed 30–40 minutes before the nutrient one.

FRACTIONAL STOMACH TUBING

Purpose: to determine the acidity of gastric juice.

Equipment:

- rubber gloves;
- sterile gastric tube;
- towel;
- cabbage broth, heated to 39–40 ° C;
- sterile syringe in the tray;
- clamp;
- boiled water;
- tripod with 10 test tubes numbered from 0 to 9;
- reserve capacity for the remains of gastric contents, trial breakfast;
- watch;
- form-referral to a clinical laboratory;
- tray for used material.

Prerequisites:

- perform the procedure in the morning on an empty stomach;
- prepare cabbage broth the night before according to the following recipe: 0.5 kg of cabbage + 0.5 liters of water, continue to boil for half an hour after boiling, then insist 0.5 hours and strain.

Preparation for the procedure:

- Explain to the child's mother the purpose and course of the procedure, to get consent.
- Prepare the necessary equipment.
- Write a referral to a clinical laboratory.
- Wash and dry hands, wear gloves.
- Place the child.
- Probe the distance from the earlobe to the tip of the nose and from the tip of the nose to the end of the xiphoid process.

- Make a mark on the probe.

Execution of the procedure:

- Take the probe in the right hand at a distance of 10-15 cm from the "blind end", and the left hand to support its free end.
- Wet the "blind end" of the probe with boiled water by watering.
- Ask the child to open his mouth and place the "blind end" of the probe along the midline of the tongue.

- Ask the child to close his mouth, breathe deeply and make swallowing movements.

- Insert the probe to the mark during swallowing movements

NB: if the child coughs, chokes, or immediately pushes out the probe while inserting the probe.

- Put the probe behind the teeth with the index finger of the right hand.

- Ask the child to grit his or her teeth and not grit them until the ending of the probe.

- Lay the baby on his stomach .

- Give a towel and ask to spit saliva into it during the procedure.

- Lower the free end of the probe into the 0 tube and collect the remnants of gastric contents.

NB: with a large amount use the extra capacity:

- When receiving is stopped, the remnants of gastric contents (determined by the disappearance of turbidity, various impurities) apply a clamp or tie the probe for 15 minutes.

- After 15 minutes, remove the clamp, collect gastric juice by gravity or with a syringe in 1 test tube.

- Put the clamp back on, tie the probe for 15 minutes, then remove it and collect the gastric juice in a test tube 2.

- Similarly, collect gastric juice in tubes 3 and 4.

- Inject a warm test breakfast (cabbage broth) into the stomach through a tube with a syringe and tie it for 15 minutes.

NB: the amount of cabbage broth is determined by the formula $N \times 10$, where N is years of the child:

- After 15 minutes, untie the probe and collect 5 leftovers of the test breakfast in a test tube.

- After they are over, put the clamp on the probe, tie for 15 minutes.

- After 15 minutes, remove the clamp and collect gastric juice by gravity or with a syringe in 6 test tubes.

- Put the clamp back on, tie the probe for 15 minutes, then remove it and collect the gastric juice in a test tube 7.

- Similarly, collect gastric juice in tubes 8 and 9.

- Quickly remove the probe from the stomach through a towel.

- Place the probe in the tray.

Completion of the procedure:

- All used tools should be disinfected.
- Remove gloves.
- Wash and dry your hands.
- Arrange transportation of the received material in boxes to the laboratory with a direction no later than 2 hours after collection.

FRACTIONAL DUODENAL TUBING

Purpose:

- to determine the type of dyskinesia of the biliary tract;
- detect giardia.

Equipment:

- rubber gloves;
- sterile duodenal probe with oil;
- towel;
- 33 % solution of magnesium sulfate, heated to 39–40⁰ C;
- sterile syringe in the tray;
- boiled water;
- tripod with 7 marked test tubes: a–1 pc; B–5 pc; c–1 pc;
- a set of spare tubes;
- hot water bottle filled with warm water and wrapped in a towel or diaper, folded in 4 layers;
- capacity to collect gastric contents during the advancement of the probe into the duodenum;
- clock;
- paper, pen for fixing time;
- form-referral to a clinical laboratory;
- tray for used material.

Prerequisite: perform the procedure in the morning on an empty stomach.

Preparation for the procedure:

- Explain to the child's mother the purpose and course of the procedure, get consent.
- Prepare the necessary equipment.
- Write a referral to the laboratory.
- Wash and dry hands, wear gloves.
- Place the child.
- Make the first mark on the probe by measuring the distance from the earlobe to the tip of the nose and from the tip of the nose to the end of the xiphoid process.
- Make a second mark on the probe, measuring the distance from the end of the xiphoid process to the navel + 2 cm.

Execution of the procedure

- Take the probe with the right hand at a distance of 10–15 cm from the "blind end", and the left hand to support its free end.
- Wet the "blind end" of the probe with boiled water by watering.
- Ask the child to open his mouth and place the "blind end" of the probe along the midline of the root of the tongue.
- Ask your child to close his mouth, breathe deeply and make swallowing movements.
- Insert the probe to the first mark during swallowing movements.

Note: if the child coughs, chokes, or immediately pulls out the probe.

- Lay the baby on the right side on a warmer wrapped in a towel or diaper folded in 4 layers.
- Lower the free end of the probe into the container designed to collect gastric contents while moving the probe.
- Ask the child to move the probe to the second mark slowly during swallowing movements for 20–30 minutes.
- Start the probe behind the teeth with the index finger of the right hand.
- Ask the child to grit his teeth and not grit them until the end of the probe.

- When a yellow secretion appears in the container, place the free end of the probe in test tube A and collect the intestinal portion (until it stops or changes color).

- Using a syringe, inject a warm solution of magnesium sulfate in an amount of 20–30 ml through a probe.

- Record the time of its introduction.

- Lift the free end of the probe up, clamp it for 1–2 minutes.

- Squeeze the probe and lower its free end into the first tube B.

- Record on paper the time of appearance of portion B.

- Collect "bubble" portion B for 5 minutes in four tubes; in the fifth tube, leave the probe until the color of bile changes.

Note: with a large number of portions B, take spare test tubes to collect it.

- Record the time of appearance of the liver portion C.

- Transfer the probe to test tube C.

- Collect 5-10 ml of liver portion C.

- Quickly pull the probe through the towel.

- Place the probe in the tray.

Completion of the procedure.

- Disinfect all used tools.

- Remove gloves.

- Wash and dry your hands.

- Organize transportation of the received material (in boxes) to the laboratory.

PREPARING THE PATIENT FOR X-RAY EXAMINATION OF THE GASTROINTESTINAL TRACT

WARNING! The more successful you prepare the patient, the more successful the study will be.

Patient preparation begins a few days before the study. Special training is needed for patients suffering from constipation and flatulence.

The nurse is obliged to prescribe a doctor:

- to warn the patient about the appointed research, time and place of its carrying out;

– warn about the prescribed diet, which excludes foods rich in fiber, which helps to increase flatulence:

- a) fresh black bread;
- b) potatoes;
- c) peas (all legumes);
- d) fresh milk, carbohydrates;
- e) fresh vegetables and fruits, etc.

To warn about the termination of food intake 12 hours before inspection (at some researches it is desirable not to drink even. Therefore seriously ill people appoint researches only in the morning);

– to warn the patient that on the day of the study, he should not eat or drink;

– warn the patient that he should inform if bloating occurs on the eve of the study.

The nurse should know that if the patient eats on the day of the study, the doctor will be in a difficult position, and the patient - at a disadvantage because the examination will have to be repeated - due to the fact that patients, especially with impaired motor and evacuation functions, prolonged delay of food intake.

In this regard, the patient is given a light dinner on the eve of the study no later than 19–20 hours.

The patient is allowed to receive:

- eggs;
- cream;
- caviar;
- cheese;
- meat and fish without spices;
- tea, coffee without sugar;
- porridge on water, etc.

REMEMBER: complete starvation is undesirable, as it promotes gas formation.

X-RAY EXAMINATION OF THE STOMACH AND DUODENUM

This study is performed strictly on an empty stomach. The appointment of a cleansing enema is not required. It is enough to follow a diet.

X-RAY EXAMINATION OF THE COLON (IRIGOSCOPY)

This study requires complete cleansing of the intestines from the contents and gases. Currently, 3 options are used to prepare the patient for the study.

Variant 1

- when performing a cleansing enema on the eve of the study, it is recommended to add Tannin at the rate of 7.0 per 1.5 liters of water;
- before the morning enema, a light morning breakfast is possible so that you call the reflex from the small intestine to the large intestine, as well as prevent the accumulation of gas in the intestines.

Variant 2

1. During the 2 days preceding the study, the patient is prescribed a slag-free diet.
2. On the eve of the study, in the afternoon, the patient takes 30–40 g of castor oil (if there are no signs of intestinal obstruction).
3. At night (30–40 minutes after dinner) is a deep cleansing enema (to "clean" wash water).
4. In the morning on the day of the study, 20–30 minutes after a light breakfast and two hours before the study - the second cleansing enema.

FECES SAMPLING FOR PATHOGENIC INTESTINAL MICROFLORA

Equipment:

- a sterile test tube with a metallic loop;
- gloves;

- a referral;
- a pencil for container marking.

Preparation for the procedure:

- Inform the mother (child) about the course of the procedure.

- Prepare the necessary equipment.
- Sign the referral to the bacteriological laboratory.
- Number the test tube according to the referral number.
- Wash and dry hands and don rubber gloves.

Procedure:

- Put the child on his/her left side with the legs flexed in the knee and hip joints and bent to the abdomen.

- Draw the child's buttocks apart with the 1st and 2nd fingers of the left hand.

- Take a metallic loop from a test tube with the right hand and introduce it with rotating movements; take rectal content from the rectum walls. The depth of loop introduction makes 2–3 cm in young children and 5–6 cm in older ones.

- Remove the loop from the rectum and put into a sterile test tube. If there is no material in the loop, it is necessary to introduce it one more time and ask the patient to strain. Blood found in stool should be taken as a sample for investigation.

Completion of the procedure:

- Remove the gloves, wash and dry hands.
- Send the material to the laboratory (with the referral). It is admissible to store the test tube for 48 hours at a temperature of 3–4 °C.

BIOLOGICAL MATERIAL SAMPLING

For enterobiasis investigation the scrape from the perianal folds is sampled in the morning taking into account the fact that threadworms are laying eggs at night.

Technique of Scraping for Enterobiasis

Equipment:

- 2 glass slides;
- 50 % glycerin solution;
- a pipette;

- a stick with a cotton ball on the top;
- a referral;
- a pencil for container marking;
- rubber gloves;
- kraft paper and a rubber band.

Essential condition: not to wash the child's genitals before investigation to avoid mechanical elimination of eggs from the perianal folds.

Preparation for the procedure:

- Explain the mother (relatives) the aim and course of the procedure.

- Prepare the necessary equipment.
- Number the glass slide according to the referral number.
- Drip one drop of glycerine onto the glass slide.
- Wash and dry hands and don gloves.

Procedure:

- Put the child on his/her left side flexing his/her left leg in the knee joint abducting it upwards.

- Draw the child's buttocks apart and fix them in this position.

- Moisten a cotton ball on a stick with one drop of glycerol solution and scrape the perianal folds.

- Take a smear with a cotton ball and apply it on the glass slide in the glycerine drop (or put the stick with cotton ball in it).

- Apply the second glass slide onto the first one connecting them with the help of a rubber band and wrapping in kraft paper.

Completion of the procedure:

- Wash and process your hands in the gloves with antiseptic solution; remove the gloves.

- Wash and dry hands. Send the material to the laboratory with the referral.

Examples of test control

1. For hypertonic enemas using :
 - A. 0.5 % sodium chloride solution;
 - B. 5 % solution of sodium chloride;
 - C. 10 % solution of sodium chloride;**
 - D. 25 % solution of sodium chloride;
 - E. 50 % solution of sodium chloride.

2. Cleaning of enema's rooms shall be:
 - A. 1 per day;
 - B. 2 times a day;**
 - C. 1 every 2–3 days;
 - D. 1 time per week;
 - E. 1 every 10 days.

3. Methods of gastric lavage in children, except:
 - A. "Restaurant";
 - B. Washing with the use of thick gastric probe;
 - C. Washing with the use of thin gastric probe;
 - D. Washing with the use of short gastric probe;**
 - E. Washing with drug use (Apomorfin) which has a strong emetic effect.

4. The temperature of solution, which use for gastric lavage:
 - A. 20–25 ° C;
 - B. 28–29 ° C;
 - C. 30–33 ° C;
 - D. 35–37 ° C;**
 - E. 38–40 ° C.

5. The depth of inputing probe is determined by:
 - A. From nose to xiphoid process;
 - B. From the ear lobe to the tip of the nose and to the end of xiphoid process;**
 - C. From the ear lobe to the chin and to the umbilicus;

- D. From the chin to the pubic bone;
E. From one ear lobe to another and to the umbilicus.
6. The length of gass evacuation tube using in children of school-age is:
- A. 2–3 cm;
 - B. 5–8 cm;
 - C. 10–12 cm;
 - D. 15–25 cm;**
 - E. 30–60 cm.
7. Cleaning enemas are contraindicated for, exept:
- A. In acute inflammatory and ulcerative processes of the colon;
 - B. Cracks and swelling in the anus and rectum;
 - C. Appendicitis;
 - D. Intestinal bleeding;
 - E. Constipation.**
9. The solution for emulsion enemas contens everything exept:
- A. 2 cups of chamomile extract;
 - B. Beat one egg yolk;
 - C. 1 teaspoon of sodium bicarbonate;
 - D. 50 ml 10 % solution of sodium chloride;**
 - E. 2 tablepoons of vaseline oil or glycerol.
10. Cleaning of enema's rooms shall be:
- A. 1 per day;
 - B. 2 times a day;**
 - C. 1 every 2 - 3 days;
 - D. 1 time per week;
 - E. 1 every 10 days.
11. Methods of feces research, exept:
- A. Macroscopic;
 - B. Microscopic;
 - C. Chemical;

- D. Bacteriological;
- E. **Biological.**

12. Shelf life of collected urine for an overall analysis:

- A. **Not more than 1 hour;**
- B. 2–3 hours;
- C. 12 hours;
- D. Not more than a day;
- E. Shelf life is not important.

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