LECTURE COMPLEX

Discipline: «Pediatric surgery»
Discipline code: PS 4312
Code and OP name:6B10115 "Medicine"
Training hours/credits:150 hours/5 credits
Course and semester of study: 4th year VII semester
Lecturetime: 15 hours

Shymkent, 2025

The lecture complex is designed in accordance with the working curriculum disipline program (syllabus) "title" and discussed at the meeting departments

Protocol No.2 of "25" 09.2025g.

Head of the Department. PhD ass. proffesor K. S. Kemelbekov.

Lecture #1

1. **Topic**: "History of pediatric surgery in the Republic of Kazakhstan. Features of acute appendicitis in children. Peritonitis".
2. **Objective**: To introduce students to the formation and development of pediatric surgery in the Republic of Kazakhstan. Features of acute appendicitis in children and their complications.
3. **Abstract of the lecture**:

Pediatric surgery is a science that studies the etiology, pathogenesis, clinic, outcomes, research methods, and treatment of congenital and acquired malformations and diseases of childhood.

In 1957, the Department of Pediatric Surgery was organized as part of ASMI on a clinical base of 50 beds. The first head is appointed Candidate of Medical Sciences Associate Professor Evdokia Cherkasova.

In 1968, a young candidate of Medical Sciences, Associate Professor K. S. Ormantaev was appointed head of the Department of Pediatric Surgery.

K. S. Ormantaev was the first to realize the need for parallel development of research work at the department with the practical activities of the Department.

K. S. Ormantaev entered the doctoral program of the Research Institute of Pediatrics of the USSR Academy of Medical Sciences in 1967 and under the guidance of A. G. Pugachev in 1971, brilliantly defended his doctoral dissertation on the topic: "Surgical treatment of bilateral purulent diseases in children". In 1972, he was awarded the degree of professor at the age of 36.

He is the founder of the school of pediatric surgeons of Kazakhstan, under his leadership 60 candidate and 8 doctoral theses were completed.

Many of his students have become major scientists, have their own research areas and schools, hold prominent positions and actively participate in the organization of pediatric healthcare in the republic.

Doctors of Medical Sciences in pediatric Surgery and their work:

1. Akanzaripov Zamanbek - " Complications and their consequences during intestinal resection in children", Moscow (1989).
2. Zhumabekov Tulegen Altay Uly - " Intensive care of children with severe traumatic brain injury in children" Moscow., (1990).
3. Мырзабеков Төребек Мырзабек Ұлы. "Results of surgical treatment of bilateral chronic lung disease in children". 1990.
4. Кожаканов Kozhakanov Кожакан Kasen Kozhakanly " Determination of the severity and treatment of chemical burns of the esophagus in children", Moscow, (1991).
5. Karabekov Agabek Karabekovich - " New methods of diagnosis and treatment of children with funnel-shaped chest deformity", Almaty (1996).
6. Mailybayev Bakhitzhan Muratlyi Слы- "Bladder dysfunction in children and their treatment using a helium-neon laser", Almaty (1996); SNA. Headof Department. Kaz NC ped. And so on.
7. Yeshmukhambetuly Sultanbek- "Clinical and pathogenetic substantiation of operative correction of ureterocystic fistula malformations in children", Almaty (1998);.

Inflammation of the appendix (appendicitis)- the most common surgical disease in childhood. Unlike adults, acute appendicitis in children is clinically more severe, and the diagnosis is much more complicated. These patterns are most pronounced in children of the first years of life, which is due to the anatomical and physiological features of the child's body.

Acute appendicitis can affect a child of any age, even infants and newborns. However, for the first time 2 years of life, this disease is quite rare. In subsequent years, the incidence of the disease gradually increases, reaching a peak at the age of 9-12 years.

The overall rate of acute appendicitis is 0.5-0.8 per 1000 children. Peritonitis, as a complication of appendicitis,eis often observed, with fatal outcomes.

4. Illustrative material: slides

5. References:

Mainpage:

1) Isakov Yu. F. Surgical diseases of childhood. In 2 volumes, Vol. 1. -632 p.; Vol. 2. -584 p. Moscow: Geotar-media, 2010.

2) Дюсембаев А.А., Ормантаев К.С. Балалар хирургиясы. Almaty 2008

Additional information:

1) Nemilova T. K. Malformations of the digestive tract in newborns SPb 2002

2) Children's anesthesiology and resuscitation: textbook. Edited by V. A. Mikhelson and V. A. Grebennikov.-2nd edition, revised and additional-M.: Medetsina, 2001.

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1)Балалар хирургиясы [Электронный ресурс]: оқулық / ред. баск. А. А. Дюсембаев. - Electron. text messages. (138Mb). - Moscow: "Litterra", 2016. - 592 b. p.

2) A doctor's consultant. Children's surgery. Version 1. 1 [Electronic resource]: manual. - Electron. text messages. (553 Mb). Moscow: GEOTAR-Media, 2009. e-opt. disk (CD-ROM).

6. Security questions (feedback):

1) Founder of pediatric surgery in the Republic of Kazakhstan?
2) Name the scientists and their works who have made a huge contribution to the development of pediatric surgery in the Republic of Kazakhstan?
3) A common disease associated with the acute abdominal clinic.
4) Features of the clinical course of acute appendicitis in children under 3 years of age
5) Differential diagnosis
6) Treatment methods
7) Complications

Lecture #2

1. **Topic:** "Esophageal atresia. Phrenic hernia. Gastroschisis. Omphalocele".
2. **Objective:** To familiarize students with congenital diseases of the esophagus, diaphragm and abdominal wall, differential diagnosis and modern methods of diagnosis and treatment.
3. Lecture theses: Esophageal atresia, phrenic hernia, gastroschisis and omphalocele are severe congenital malformations that affect the digestive tract or abdominal wall, often combine with each other and require emergency surgical care for newborns. Esophageal atresia – incomplete formation of the esophagus, phrenic hernia-displacement of the abdominal organs to the chest through a defect in the diaphragm, gastroschisis – loss of the intestine through a defect in the abdominal wall (without a bag), and omphalocele (embryonic hernia) – loss of organs in the bag from the navel.

Esophageal atresia. The esophagus does not have a through lumen, and its upper and lower ends do not connect, often with a tracheoesophageal fistula. The baby can not swallow, food accumulates in the upper part, can get into the lungs. Treatment: Emergency surgery to connect the esophagus.

Phrenic hernia. Part of the abdominal organs (stomach, intestines) is displaced to the chest through an opening in the diaphragm (esophagus). Compression of the lungs and heart, respiratory and digestive disorders. Treatment: Surgical correction of the diaphragm defect.

Gastroschisis is a defect in the anterior abdominal wall in the navel area (but does not affect the umbilical ring), through which the intestinal loops exit. The intestines are located outside, not covered with a shell, which leads to its inflammation, thickening. Treatment: Surgical closure of the defect, placing the bowel back.

Omphalocele. Congenital hernia of the umbilical cord, in which internal organs (intestines, liver) exit through a defect in the abdominal wall and are located in a sac of the amnion and peritoneum.

Protrusion, which can be large; often combined with other vlookup and genetic disorders. Surgery for organ reduction and abdominal wall plastic surgery.
Common features: All these conditions are diagnosed in utero using ultrasound. They require delivery in specialized perinatal centers. Without timely help, many of them are incompatible with life

3. Illustrative material: slides

4. References:

Mainpage:

1) Collection of clinical protocols for the pediatrics profile developed in 2014. Volume 1-Astana, 2015j-616 bet.
2) Collection of clinical protocols on the pediatrics profile developed in 2014. Volume 2-Astana, 2015j-667 bet.
3. Isakov Yu. F. Surgical diseases of childhood. In 2 volumes, Vol. 1. -632 p.; Vol. 2. -584 p. Moscow: Geotar-media, 2010.
4) Дюсембаев А.А., Ормантаев К.С. Балалар хирургиясы. Almaty 2008
5) Тұрсынов Қ. Нәрестелер хирургиясы: оқулық. - Almaty 2011

Additional information:

1) Detskaya operativnaya khirurgiya: prakt. ruk [Children's operative surgery: practical hands]. Tikhomirovoy V. D. St. Petersburg: Inform. Izd. Agency "Lik", 2001
2) Nemilova T. K. Malformations of the digestive tract in newborns SPb 2002

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1)Балалар хирургиясы [Электронный ресурс]: оқулық / ред. баск. А. А. Дюсембаев. - Electron. text messages. (138Mb). - Moscow: "Litterra", 2016. - 592 b. p.
2) A doctor's consultant. Children's surgery. Version 1. 1 [Electronic resource]: manual. - Electron. text messages. (553 Mb). Moscow: GEOTAR-Media, 2009. e-opt. disk (CD-ROM).

5. Security questions (feedback):

1) Esophageal atresia: etiology, classification, clinic, diagnosis, treatment.
2) Diaphragmatic hernia: classification, clinic, diagnosis, treatment.
3) Gastroschisis, omphalocele. Clinic diagnostics, treatment.

Lecture #3

1. **Topic**: "Congenital intestinal obstruction".
2. **Purpose**: To inform students about the methods of early diagnosis of congenital intestinal obstruction and surgical methods of treatment.
3. **Lecture theses**: Intestinal obstruction is one of the most severe forms of acute abdominal diseases that require urgent diagnosis. There is a distinction between congenital and acquired obstruction. According to N. E. Surin, S. D. Ternovsky, Kh. I. Feldman and others. congenital obstruction is 10-11%, and acquired obstruction is 89-90%. Congenital intestinal obstruction (HCN) is a serious condition in newborns caused by malformations of the gastrointestinal tract (atresia, stenosis, abnormal rotation, compression), which prevents the passage of contents, manifested by vomiting (often green), bloating and lack of stool. This is an urgent condition that requires immediate surgical correction, as it threatens dehydration and multiple organ failure, and its diagnosis is carried out by ultrasound in the prenatal period and radiography after birth.

Atresia and stenosis:

- Narrowing or complete absence of the lumen of the intestine (for example, small or duodenal).
-Strangulation: Compression of the intestinal loop (vessels, cords, ring-shaped pancreas).
- Rotation disorders: The bowel has not taken the correct position, which can lead to inversion.
-Meconium obstruction: Thick meconium blocks the bowel, often associated with cysticfibrosis.

Symptoms: Repeated vomiting, often with an admixture of bile (green color). Bloating: Due to the accumulation of gases and contents above the obstacle site. Lack of stool: and gas discharge. Rapid deterioration, dehydration.
Diagnosis: Ultrasound examination (US): Often reveals defects already during pregnancy. Radiography: Survey of the abdominal cavity, irrigoscopy.
Treatment
Emergency surgical intervention: The goal is to restore intestinal patency, eliminate defects.
Preoperative preparation: Correction of dehydration and electrolyte disturbances within 6-24 hours.
Important: This condition is life-threatening. The earlier the diagnosis and operation is performed, the higher the chances of a favorable outcome.

4. **Illustrative material**: slide, X-rays
5. References:
Mainpage:
1) Collection of clinical protocols for the pediatrics profile developed in 2014. Volume 1-Astana, 2015j-616 bet.
2) Collection of clinical protocols on the pediatrics profile developed in 2014. Volume 2-Astana, 2015j-667 bet.
3. Isakov Yu. F. Surgical diseases of childhood. In 2 volumes, Vol. 1. -632 p.; Vol. 2. -584 p. Moscow: Geotar-media, 2010.
4) Дюсембаев А.А., Ормантаев К.С. Балалар хирургиясы. Almaty 2008
5) Тұрсынов Қ. Нәрестелер хирургиясы: оқулық. - Almaty 2011
Additional information:
1) Detskaya operativnaya khirurgiya: prakt. ruk [Children's operative surgery: practical hands]. Tikhomirovoy V. D. St. Petersburg: Inform. Izd. Agency "Lik", 2001
3) Nemilova T. K. Malformations of the digestive tract in newborns SPb 2002
4) Children's anesthesiology and resuscitation: textbook. Edited by V. A. Mikhelson and V. A. Grebennikov.-2nd edition, revised and additional-M.: Medetsina, 2001.
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1)Балалар хирургиясы [Электронный ресурс]: оқулық / ред. басқ. А. А. Дюсембаев. - Electron. text messages. (138Mb). - Moscow: "Litterra", 2016. - 592 b. p.
2) A doctor's consultant. Children's surgery. Version 1. 1 [Electronic resource]: manual. - Electron. text messages. (553 Mb). Moscow: GEOTAR-Media, 2009. e-opt. disk (CD-ROM).
6) Control questions (feedback):
1) Clinical and diagnostic criteria for congenital intestinal obstruction
2) Congenital high obstruction
3) Congenital low obstruction
4) Intestinal obstruction at different levels of the digestive tube. Differential diagnosis..

Lecture #4
1. Topic: "Acquired intestinal obstruction. Intussusception of the intestine".
2. Purpose: To inform students about the methods of early diagnosis of congenital and acquired intestinal obstruction, conservative and operative methods of treatment.
3. Lecture theses: Intestinal obstruction is one of the most severe forms of acute abdominal diseases that require urgent diagnosis. There is a distinction between congenital and acquired obstruction. Acquired intestinal obstruction accounts for 85 to 90% of all types of acute intestinal obstruction. Among its various forms in children, invagination is of the greatest practical importance. **Intestinal obstruction** is characterized by the cessation (sharp slowing down) of the movement of contents

through the intestine. Children have a distinction between congenital and acquired intestinal obstruction. According to N. E. Surin, S. D. Ternovsky, Kh. I. Feldman and others. congenital obstruction is 10-11%, and acquired obstruction is 89-90%. For reasons of occurrence, acquired obstruction is divided into mechanical and dynamic (paralytic and spastic). By clinical manifestations - acute (or complete), subacute, chronic (or incomplete), and recurrent. **Invaginatio** (intussusceptio, intussusceptio) - introduction of one part of the intestine into another. Intussusception is the most common form of intestinal obstruction in children. According to statistics, 80-90% of all casesof intussusception in children occur in infancy, and this disease is especially common in the second and third quarters of the first year of a child's life. In the second year of life, invagination is much less common. Pathogenetically, this type of obstruction combines signs of both obturation (closure of the intestinal lumen by the embedded intestine) and strangulation (infringement of the mesentery of the embedded intestine). Intussusception of the small intestine into the small intestine, the large intestine into the large intestine, and the small intestine into the large intestine may occur. However, more often it occurs in the ileocecal angle. Ileocecal invagination can be of two types: ileocolonic (the ileum is inserted into the ascending one through the Bauginian flap) and cecocolonic (the cecum is inserted into the ascending one, dragging the ileum with it). In the invaginate, there is a distinction between the external intestine, called the vagina (intussuspiens), into which the insertion took place, and the internal embedded intestine-the invaginate (itussusceptum).

6. **Illustrative material**: slide, X-rays

7. References:

Mainpage:

2) Collection of clinical protocols for the pediatrics profile developed in 2014. Volume 1-Astana, 2015j-616 bet.

2) Collection of clinical protocols on the pediatrics profile developed in 2014. Volume 2-Astana, 2015j-667 bet.

3. Isakov Yu. F. Surgical diseases of childhood. In 2 volumes, Vol. 1. -632 p.; Vol. 2. -584 p. Moscow: Geotar-media, 2010.

4) Дюсембаев А.А., Ормантаев К.С. Балалар хирургиясы. Almaty 2008

5) Тұрсынов Қ. Нәрестелер хирургиясы: оқулық. - Almaty 2011

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3) Nemilova T. K. Malformations of the digestive tract in newborns SPb 2002

4) Children's anesthesiology and resuscitation: textbook. Edited by V. A. Mikhelson and V. A. Grebennikov.-2nd edition, revised and additional-M.: Medetsina, 2001.

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2) A doctor's consultant. Children's surgery. Version 1. 1 [Electronic resource]: manual. - Electron. text messages. (553 Mb). Moscow: GEOTAR-Media, 2009. e-opt. disk (CD-ROM).

6) Control questions (feedback):

1) Clinical and diagnostic criteria for acquired intestinal obstruction
2) Intestinal intussusception, causes.
3) Intestinal intussusception, clinic, diagnosis and treatment.
4) Adhesive intestinal obstruction.
4) Intestinal obstruction at different levels of the digestive tube. Differential diagnosis..

Lecture #5

1. Topic: "Malformations of the colon. Hirschsprung's disease. Atresia of the anus and rectum."

2. Purpose: To inform students about the methods of early diagnosis of congenital malformations of the colon, conservative and operative methods of treatment.

3. Lecture theses: Malformations of the large intestine, such as Hirschsprung's disease (the absence of nerve cells in the intestinal wall, leading to chronic constipation) and Atresia of the anus and rectum (congenital overgrowth or absence of the anal opening), are severe congenital conditions that disrupt normal bowel emptying, requiring early diagnosis and urgent surgical treatment, since without it, intestinal obstruction and sepsis can occur.

Болезнь Hirschsprung's disease (АганглиозColon agangliosis)

The bottom line: The congenital absence of ganglion nerve plexuses in the wall of part of the colon or the entire intestine, which paralyzes this segment.

Cause: Abnormal migration of nerve cells during intrauterine development.

Symptoms: Chronic constipation, bloating, vomiting, asymmetrical stomach, poor weight gain in children, lack of meconium (original feces) in newborns.

Consequences: Intestinal obstruction, inflammation (enterocolitis), perforation, sepsis.

Treatment: Surgical removal of the affected area of the intestine.

Atresia of the anus and rectum

The bottom line: Congenital absence or overgrowth of the anal opening and the end part of the rectum.

Cause: Malformation during embryogenesis.

Symptoms: Lack of stool in the first hours/days of life, restlessness, vomiting, bloating (symptoms of intestinal obstruction). Sometimes feces can be released through fistulas (for example, in the urethra, genital tract).

Treatment: Immediate surgical intervention, often in several stages (creating колостомыа colostomy, then plasticizing the rectum).

Common features

Congenital: Both malformations are congenital anomalies.

Violation of the function: Lead to intestinal obstruction.

Urgency of treatment: Require urgent medical attention, especially in the neonatal period.

4. Illustrative material: slide, X-rays

5. References:

Mainpage:

3) Collection of clinical protocols for the pediatrics profile developed in 2014. Volume 1-Astana, 2015j-616 bet.

2) Collection of clinical protocols on the pediatrics profile developed in 2014. Volume 2-Astana, 2015j-667 bet.

3. Isakov Yu. F. Surgical diseases of childhood. In 2 volumes, Vol. 1. -632 p.; Vol. 2. -584 p. Moscow: Geotar-media, 2010.

4) Дюсембаев А.А., Ормантаев К.С. Балалар хирургиясы. Almaty 2008

5) Тұрсынов Қ. Нәрестелер хирургиясы: оқулық. - Almaty 2011

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3) Nemilova T. K. Malformations of the digestive tract in newborns SPb 2002

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6) Control questions (feedback):

1) Hirschsprung's disease, clinic diagnosis, treatment.
2) Megacolon. Dolichosigma.
3) Atresia of the anus and rectum, clinic, diagnosis and treatment.

Lecture # 6

1. Topic: "Lung malformations. Bacterial destruction of lekgih".

2. Purpose: To inform students about the methods of early diagnosis of congenital malformations of the lungs, conservative and operative methods of treatment.

3. Lecture theses: Lung malformations are congenital structural abnormalities that occur during intrauterine development and lead to impaired function, manifested by coughing, shortness of breath, and cyanosis. Bacterial destruction of the lungs (purulent-necrotic pneumonia) is a severe complication of pneumonia caused by bacteria, leading to purulent melting and necrosis of the lung tissue, manifested by fever, severe cough with purulent sputum and intoxication.

Malformations of the lungs are congenital changes in the bronchopulmonary system that affect its work. Examples: Aplasia (absence), hypoplasia (underdevelopment) of blood vessels, arteriovenous fistulas, anomalies of the confluence of pulmonary veins.

Symptoms: May occur at any age, including shortness of breath, cough (often purulent), hemoptysis, chest deformity.

Diagnostics: Radiography, CT, bronchoscopy, bronchography.

Treatment: Surgical (resection) or conservative.

Bacterial destruction of the lungs

Severe form of pneumonia with purulent-necrotic disintegration of the pulmonary parenchyma.

Causes: Staphylococci, Pseudomonas aeruginosa, Escherichia coli, pneumococci, often after the flu, ARVI.

Symptoms: High fever, chills, shortness of breath, chest pain, severe intoxication; after a breakthrough in the bronchi — copious fetid sputum.

Forms: Simple abscess, gangrenous abscess, gangrene of the lung.

Diagnosis: Clinical picture, X-ray, CT, sputum culture.

Treatment: Massive antibiotic therapy, drainage, pathogenetic therapy. **4. Illustrative material**: slide, X-rays

5. References:

Mainpage:

1) Collection of clinical protocols for the pediatrics profile developed in 2014. Volume 1-Astana, 2015j-616 bet.
2) Collection of clinical protocols on the pediatrics profile developed in 2014. Volume 2-Astana, 2015j-667 bet.
3. Isakov Yu. F. Surgical diseases of childhood. In 2 volumes, Vol. 1. -632 p.; Vol. 2. -584 p. Moscow: Geotar-media, 2010.
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6) Control questions (feedback):

1) Lung malformations, clinical diagnosis, treatment.
2) bronchiectasis.
3) Bacterial destruction of the lungs, clinic, diagnosis and treatment.

Lecture # 7

1. **Topic**: "Congenital fistulas of the navel. Meckel's diverticulum. Inguinal hernia. Cryptorchidism. Varicocele. Hydrocele".
2. **Purpose**: To inform students about the methods of early diagnosis of diseases associated with disorders of obliteration of the vaginal process, pathology of the urachus and their surgical methods of treatment.
3. **Lecture theses**: **The umbilicalfistulais**a pathologically formed non-natural channel connecting the external unhealed**navel cavity** with internal organs (bladder or intestines). Meckel's diverticulum (ileum diverticulum) is a congenital anomaly of the small intestine associated with a violation of the reverse development of the proximal part of the yolk duct (the duct between the navel and the intestine), when необлитерированнойits proximal part remains ungliterated (unclosed). **Inguinal hernia** is a pathological protrusion of the peritoneum into the cavity of the inguinal canal. ***With a pinched inguinal hernia, the following clinic is observed:*** sharp, gradually increasing pain; nausea, hiccups, repeated vomiting; stool and gas retention; serious condition of the patient; tension, soreness of the hernial protrusion. Cryptorchidism (synonym: testicular retention) is the retention of the testicle on its natural path when it descends into the scrotum. The delay can occur at different levels, and therefore distinguish: A) Abdominal cryptorchidism – the testicle is located in the abdominal cavity; B) inguinal cryptorchidism – the testicle is located in the inguinal canal. Testicular dropsy (syn.: hydrocele) is an accumulation of fluid between the parietal and visceral layers of the vaginal membrane of the testicle. It is observed when незараженииthe vaginal process of the peritoneum is not infected.
4. **Illustrative material**: slides
5. **References**:

Mainpage:

1) Collection of clinical protocols on the pediatrics profile developed in 2014. Volume 1-Astana, 2015j-616 bet.
2) Collection of clinical protocols on the pediatrics profile developed in 2014. Volume 2-Astana, 2015j-667 bet.
3. Isakov Yu. F. Surgical diseases of childhood. In 2 volumes, Vol. 1. -632 p.; Vol. 2. -584 p. Moscow: Geotar-media, 2010.
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2) Children's anesthesiology and resuscitation: textbook. Edited by V. A. Mikhelson and V. A. Grebennikov.-2nd edition, revised and additional-M.: Medetsina, 2001.
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2) A doctor's consultant. Children's surgery. Version 1. 1 [Electronic resource]: manual. - Electron. text messages. (553 Mb). Moscow: GEOTAR-Media, 2009. e-opt. disk (CD-ROM).

6. Security questions (feedback):

1) Etiology of congenital navel fistulas
2) Дивертикул Meckel's diverticulum, urachus, intestinal fistula
3) Inguinal hernia, cryptorchidism, hydrocele
4) Varicocele, etiology, treatment.

Lecture #8

1. Topic: "Congenital malformations and diseases of the urinary system".

2. **Purpose**: To inform students about the methods of early diagnosis of congenital malformations and diseases of the urinary system, conservative and operative methods of treatment.

3. **Lecture theses**: **Kidney anomalies** are manifested in changes in the shape, size, quantity, and position of the organ. Abnormalities of kidney development are formed in utero due to improper laying, differentiation of tissues and persistence of cells of embryonic structures. Symptoms. Bilateral malformations can be detected immediately after the birth of a child, as they are manifested by a pronounced insufficiency of organ function. Hypoplasia, an extra kidney, doubling and polycystic kidney disease signal the occurrence of pyelonephritis, which is formed as a result of a violation of the outflow of urine. Pain in the lumbar region, he may experience fever and signs of intoxication. Abnormalities of kidney development are often accompanied by arterial hypertension. Symptoms of an extra kidney are urinary incontinence. Sometimes there is blood in the urine, cloudy urine, urine the color of meat slops. **Diagnosis** of kidney malformations is possible with the use of special research methods (radiography, scintigraphy, echography, computed tomography, functional studies). **Treatment:** conservative, symptomatic. In case of complications, surgical treatment is indicated-nephrectomy in the presence of a second kidney and its function is preserved. In case of kidney failure, a kidney transplant is performed.

Hypospadias - absence of the distal part of the male urethra. The opening of the urethra can open at the base of the glans penis, in the area of the penis shaft, or near the scrotum. **Epispadia** - non-occlusion of the anterior wall of the urethra in the distal part of the penis (partial) or throughout its entire length (complete). The prevalence is 1 case per 50,000 newborns. With complete epispadias, urinary incontinence is observed. **ЭкстрофияBladder exstrophy** is the absence of the anterior wall of the bladder and a section of the anterior abdominal wall. It occurs in 1 child out of 50,000 newborns. The bladder is turned outwards, its mucous membrane is exposed. **Treatment:** surgical-plastic surgery of the bladder, transplantation of ureters into the rectum

4. **Illustrative material:** slides, X-rays.

5. References:

Mainpage:
2) Collection of clinical protocols for the pediatrics profile developed in 2014. Volume 1-Astana, 2015j-616 bet.

2) Collection of clinical protocols on the pediatrics profile developed in 2014. Volume 2-Astana, 2015j-667 bet.
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6) Security questions (feedback):

1) Name the kidney abnormalities
2) Instrumental methods for the diagnosis of malformations and kidney disease
3) Causes of hydronephrosis
4) Vesicoureteral reflux
5) Epispadias, hypospadias, экстрофияand bladder exstrophy
6) Phimosis, paraphimosis. Balanitis, balanoposthitis

Lecture # 9

1. Topic: "Gastrointestinal bleeding in children".

2. Purpose: To inform students about the causes and methods of early diagnosis of bleeding from the gastrointestinal tract, conservative and operative methods of treatment.

3. Lecture theses: Gastrointestinal bleeding occurs in 5-8% of children, in 55% - they are caused by peptic ulcer disease. Most often, the classification of Struchkov V. I. **is used According to localization:** from the upper parts (esophagus, stomach, duodenum); from the small intestine (ileum); from the lower parts (thick). **By clinic**: active (ongoing), stopped. **By volume**: massive (profuse), small (minimal). **By nature**: acute, chronic (hidden). **By etiology**: ulcerative, non-ulcerative. **According to the severity of blood loss**: light, medium, severe.

By frequency: primary, recurrent.

• **The main** symptom of bleeding from the upper gastrointestinal tract will **be bloody vomiting** (***haemotemesis***). It can be plentiful in the form of "coffee grounds" and scarlet blood with or without food admixtures, single-or multiple-use, accompanied by loss of consciousness, preceded **by melena** , or occur against the background of tarry feces.With *profuse* bleeding, vomiting occurs suddenly, although it may be preceded by increasing weakness, dizziness, and nausea. Quickly appear pale skin, cold sticky sweat, tachycardia, tachypnea. Blood pressure decreases, a systolic murmur is heard above the apex of the heart. This clinical picture is typical for patients with portal hypertension, Mallory-Weiss syndrome, gastric ulcer and duodenal ulcer, when эрозированыlarge arterial vessels are eroded. With significant profuse bleeding, vomiting "fountain" (portal hypertension) is noted. **The second** symptom of gastrointestinal bleeding is a black, tarry stool– ***melena***. The appearance of melena often indicates bleeding from the proximal gastrointestinal tract. However, melena is often observed in the

pathology of the esophagus, portal hypertension. The slow flow of blood into the intestinal lumen causes the dark color of feces. The gradual accumulation of blood in the colon leads to its disintegration: iron sulfate is formed, which will give the fecal masses a color from dark cherry to black. It is necessary to exclude the intake of certain foods that contain a lot of blood (blood sausage), as well as the symptom of swallowed blood in children. Dark color of feces can also be noted when taking iron preparations, bismuth, activated carbon, a large number of cherries, blueberries, raspberries, red currants.

• The cause of gastrointestinal bleeding in children from the lower gastrointestinal tract at the ageof 1 to 3 years isintestinal polyps. Juvenile (hamartomic) polyps account for more than 90% of all cases of colon polyps in childrenные (гамартомные. Hamartomic polyps are nodular formations that occur due to a violationof the embryonic development of colon tissues. The most popularlocalization of juvenile polyps is the rectum and sigmoid colon. The size of polyps ranges from a few millimeters to 3 cm. Their surface is covered with mucus, easily bleeds when injured by dense fecal masses. Polyps can also ulcerate and lead to bleeding with the development of hypochromic anemia. A severe complication is twistingof the polyp leg, followed by its necrosis and bleeding. The generalized form of juvenile gastrointestinal polyps,characterized by diarrhea, bleeding, hypoproteinemia,edema, and ascites in children under 2 years of age, is fatal in 100% of cases.

Meckel's diverticulum is a protrusion of the wall of the lower third of thesubmandibular intestine, which is a remnant of an incompletelyreduced yolk duct. In 40% of all cases of complications of Meckel's diverticulum, heavy gastrointestinal bleeding is detected in children under the age of 2 years. Up to 85% of bleeding is caused byectopia of the gastric mucosa, and much less often by ectopia of the pancreatic and duodenal tissues. Ulcers usually form on the border of theectopic and normal mucosa. Meckel's diverticulum is characterized by recurrent bleeding at certain intervals. Heavy repeated bleeding often leads to анемизацииanemia of the child.

Additional research methods for gastrointestinal bleeding

1. Rhinopharyngo-laryngoscopy.
2. Fibrogastroscopy.3
3. Fibrocolonoscopy.
4. roentgenoskopiyazhkt.
5. Angiography.
6. Ultrasound examination.
7. Laparoscopy.

4. Illustrative material: slide.

5. References:

Mainpage:

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6. Security questions (feedback):

1) Diseases accompaniedby gastrointestinalbleeding
2) Clinical picture
3) Diagnostics
4) First aid and treatment options

Lecture # 10

1. **Topic:** "Purulent-inflammatory diseases of soft tissues. Osteomyelitis".
2. **Purpose**: To inform students about the methods of early diagnosis of pyoinflammatory diseases, the principles of treatment and operational methods of access.
3. **Abstract of the lecture**:

In the development of the problem of purulent infection, there are three stages:: 1) the pre-antibiotic period; 2) the era of the emergence of antibiotics; 3) the era of staphylococcal disaster. The geography of antibiotic-resistant staphylococcus strains is interesting. The first works on this topic appeared in countries (England, USA, Poland), where penicillin and other antibiotics were widely used before. Later, in the 60s, this topic became relevant for the Soviet Union as well.

The emergence of the "staphylococcal disaster" was promoted by the widespread and often irrational use of antibiotics on the one hand, and the peculiarities of staphylococcal metabolism on the other. Cross-stability also played an important role. In addition to these factors, it is necessary to take into account the course of purulent-septic diseases in newborns associated with their anatomical and physiological features, as well as a number of processes, the so-called pathological symbiosis according to S. Ya.Doletsky. Due to the functional imperfection of RES, antigen formation in children is reduced and this leads to generalization of infection. Immaturity of the central nervous system causes rapid onset of neurotoxicosis and hyperergic reactions.

Local processes in purulent infection are characterized by: 1) rapid accumulation of necrosis, edema; 2) inhibition of local phagocytic protection.

All the listed features of the pathogenesis of acute purulent infection in newborns and infants are clinically manifested by the predominance of general symptoms over local, hyperergic reactions, generalization of the disease and rapid development of the local process.

In addition, Staphylococcus aureus has a pronounced property of adaptation to the effects of exo - and endogenous factors, which contribute to the peculiarities of metabolism. The most important ones are: 1) production of protective enzymes; 2) increased production of metabolites competing with antibiotics; 3) rearrangement of the vital activity of the microorganism by excluding the enzyme affected by antibiotics from the metabolism; 4) selective change in the permeability of the staphylococcus cell membrane to the antibiotic; 5) isolation of a number of enzymes that contribute to the action of tissues and vessels, which increase their decay, increasing the permeability of the vascular wall.

Irritation and overexposure of the central nervous system and RES, as well as significant destruction of macroorganism tissues, determines one of the most important features of staphylococcal infection – an allergic component with a clear predominance of antigen over antibody. Thus, the extreme adaptability of Staphylococcus, the presence of defense factors and aggression put staphylococcus at the forefront than other flora.

Principles of treatment of purulent infection in children are carried out according to T. V. Krasnobaev: 1) exposure to a macro-organism, 2) exposure to a micro-organism, 3) treatment of the local process.

The first principle is detoxification therapy, strengthening both cellular and humoral immunity: transfusion of plasma, blood, administration of desensitizing and pathogenetic agents, symptomatic drugs.

The effect on the microorganism is achieved mainly by the reasonable use of antibiotics – this is the use of broad-spectrum antibiotics with sensitivity determination. And in the first days, intravenous administration with a severe course of the process. No less important is the complex treatment of the local focus.

Treating a purulent surgical infection is challenging. Success depends on the timeliness and correctness of the treatment started.

Since the classical description of the clinical picture of acute osteomyelitis in 1853, Chassaiqnac has accumulated a significant number of works describing various aspects of osteomyelitis, in connection with which changes and additions were made. T. P. Krasnobaev (1925) distinguishes three main forms of the disease: toxic, septicopyemic and locally focal. I. S. Vengerovsky (1964) divides osteomyelitis to the following forms:

1) septicotoxic;
2) septicopyemic with metastases and other bones or other organs;
3) local focal form with a lesion of one bone;
4) atypical form (or primary-chronic form), which includes local diffuse osteomyelitis, склерозирующий остеомиелит Garre sclerosing osteomyelitis, Ollier albuminous osteomyelitisОлье, Brody abscess. S. Popkirov (1977) supplements this classification with a new form of “antibiotic osteomyelitis”- which is characterized by purulent-некроти-ческоенecrotic melting of the periosteum, the absence of periosteal bone formation and ossification, and poor repair.

Considering the fact that the classification should be the main one for the diagnosis and choice of treatment method. The existing classification is supplemented by Sultanbaev's identification of the intra- and extramedullary stages of the disease. Intramedullary stage – when the pus is still in the medullary canal, due to intraosseous hypertension, the prevalence of general symptoms of intoxication with minimal local signs is noted. Extramedular – when pus exits through the Volkman and Haversov channels into the parossal space, intraosseous pressure decreases and local symptoms of osteomyelitis are present.

Clinically, the septicotoxic form of the disease is characterized by a lightning-fast development of the disease with an exceptional severity of the course, which is due to pronounced intoxication phenomena. The onset of the disease is sudden: high fever, accompanied by chills. consciousness is obscured or completely absent. Breathing is frequent, shallow, and cardiovascular insufficiency increases relatively quickly, which is the cause of death. The disease is so transient that local signs do not have time to develop or they are obscured by the phenomena of intoxication, so the diagnosis of this form of osteomyelitis, even at autopsy, is extremely difficult. In the clinic of septicopyemic form, which is also characterized by a severe course, septic phenomena with the formation of metastatic ulcers in other organs dominate. The disease also begins acutely, with fever, chills, consciousness in the patient is preserved, although in some cases there is inhibition, i.e. general clinical manifestations resemble the previous form. However, in this form, patients complain of severe pain in the affected limb, possible rash on the body, diarrhea, vomiting. With the formation of purulent metastatic foci in other organs, the patient's condition becomes even more severe, since the accompanying pneumonia, purulent pleurisy, pericarditis, meningitis lead to the development of cardiovascular and respiratory failure.

With a locally focal form of the disease, local symptoms come to the fore: soreness in the projection of the affected bone, soft tissue swelling in this area. The progression of local changes leads to the

rapid formation of a subperiosteal abscess with its breakthrough into the intermuscular tissues, and in infants into the joint cavity, at the same time, the general symptoms of intoxication are less pronounced. In addition to these forms of osteomyelitis, patients with so-called primary chronic forms of osteomyelitis, characterized by a sluggish course from the onset of the disease, are relatively common in clinical practice. The reason for its development is considered to be the low virulence of microbes with high reactivity of the body (Franconi, and Walgren, 1958). These include альбуминозный остеомиелит Ollier's albuminous osteomyelitis, , Brody's intra - bone abscessсклерозирующий остеомиелит , Garre's sclerosing osteomyelitis, and antibiotic osteomyelitis. The disease begins subacute, but due to the lack of expression of the clinical picture and the difficulty диагнос-тикиof diagnosis, it is often initially viewed by doctors. The disease can be detected many years later, when radiography is performed for long-term intermittent pain in the limb and certain bone changes are detected.

Diagnostics.

Diagnosis of acute hematogenous osteomyelitis in the early stages of the disease presents significant difficulties. According to V. S. Kononov (1974), M. V. Grinev (1977), S. Popkirov (1977), G. N. Akzhigitov et al. (1986), the frequency of diagnostic errors reaches 44.6%. Analysis of these errors showed that the most common causes of difficulties in differential diagnosis are limb injuries (38%), purulent soft tissue diseases (32%) and rheumatism (15%).

Treatment of acute hematogenous osteomyelitis should be started as early as possible, because the time factor is of paramount importance due to the detrimental effect of prolonged and permanent intraosseous hypertension on the dynamics of bone destruction. You can't waste hours, much less days. Doran W., Brown L. as early as 1925, figuratively wrote that if the time from the onset of the disease to the operation changes in hours, then the patient's recovery is measured in weeks, but if the time before the operation is measured in days, then recovery is delayed for months and years.

The diagnosis of chronic osteomyelitis is simple and is based on a typical medical history and clinical course with the formation of purulent fistulas. X-ray examination, выявляю-which reveals the presence of a sequestral cavity with sequestration, is of great importance. Fistulography in the presence of fistulas allows you to clarify the localization of sequestration.

Treatment of chronic osteomyelitis is provided according to the principle of treatment of purulent infection in the chronic stage of the course: sequestrectomy, sanitation of the cavity, granulations and excision of the fistula.

Pseudofurunculosis

Anatomical and physiological features of the skin: a single-layered epidermis, a lot of intercellular fluid, the absence of a membrane, apocrine glands with wide excretory ducts, changes in blood PH contribute to the rapid penetration of infection and frequent infection of the subcutaneoustissue, the penetration of infection into the vascular bed and the occurrence of sepsis. Infection of the apocrine glands creates the appearance of microabscesses, first on the occipital region, then on the neck, etc.

Treatment is reduced to improving immunity, compliance with sanitary and hygienic rules, improving nutrition, and locally opening abscesses.

Mastitis of newborns

In connection with receiving lactohormones with mother's milk, physiological swelling of the mammary glands also occurs in newborns – this leads to their slight vulnerability and infection. Infection is indicated by the appearance of hyperemia, edema and deterioration of the general condition. When abscessing, an autopsy is indicated, so that the areola of the nipple is not affected. Mastitis very often turns into purulent-necrotic phlegmons.

Phlegmon of newborns

During phlegmon, the predominance of necrotic processes over inflammatory ones should be noted, and the stages of the process should be characterized: 1) acute with increasing intoxication and exicosis; 2) rejection of fiber; 3) stage of sepsis; 4) resedual. Treatment of phlegmon according to general principles. In local treatment at the first stage, it is important to note the correct application of incisions and the completeness of bandages. Treatment depends on the stage and time of admission.

Omphalites

It is necessary to focus on the forms of omphalitis (simple, phlegmonous and necrotic). Describe the clinic of each form. It is important to note that with a simple form, granulations (fungi) are often formed. The last two forms are fraught with the transition of the process to the umbilical vessels and the occurrence of sepsis. Differential diagnosis is carried out with calcification, navel fistulas and phlegmon of newborns. Treatment of each form according to general principles**.**

4. Illustrative material: slides

5. References:

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6)Security questions (feedback):

1) Etiopathogenesis of purulent-inflammatory diseases
2) Clinical picture
3) Diagnostics and differential diagnostics
4) Principles of treatment