MINISTRY OF HEALTH OF UKRAINE
Ukrainian Medical Stomato;ogical Academy

«Approved»
on meeting the
department of Pediatric Surgery
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METHODICAL INSTRUCTIONS

FOR STUDENTS` SELF-WORK

WHILE PREPARING FOR PRACTICAL LESSONS

Educational discipline	Pediatric Surgery
module №5	Congenital Anomalies in Children
Theme of the lesson	**Congenital anomalies of the musculoskeletal system.**
Course	VI
Faculty	foreign students preparation

POLTAVA 2020

1.The topic basis:

The relevance of the topic is that the defects of the musculoskeletal system are quite common in children, the timely diagnosis and treatment depend on the consequences of the disease and the subsequent normal growth of the child

2.The aims of the training course:

1. To master the classification of congenital hip dislocation, congenital cliché, congenital muscle curvature, congenital limb defects, congenital spine defects.
2. Recognize the main clinical symptoms of musculoskeletal disorders in children of all ages.
3. To interpret auxiliary research methods in case of defects of musculoskeletal system development.
4. Demonstrate examination of a child with developmental disorders of the musculoskeletal system.
5. To learn the algorithm of the doctor's action in case of defects in the development of the musculoskeletal system.
6. To interpret the basic principles of treatment of malformations of the musculoskeletal system in children.

3.Basic knowledge, skills, habits necessary for studying the subject (interdisciplinary integration).

Names of previous disciplines	**Obtained skills**
1. Anatomy	Palpation of different departments of the musculoskeletal system, knowledge of the features of anatomy of the musculoskeletal system in different age periods.
2. Physiology. Pathological Physiology	Clinical interpretation of laboratory studies. To compare the morphological changes inherent in various forms of pathology of the musculoskeletal system.
3. Faculty pediatrics.	Collect complaints, medical history, carry out examination of the child and additional methods of examination in pathology of the musculoskeletal system.
4. Surgical diseases, operative Surgery and topographic anatomy.	To have a technique (schemes) of operating accesses and methods of operative interventions on the organs of the

	musculoskeletal system in children of different age groups
5.Propedeutics of childhood diseases Faculty and hospital pediatrics, neonatology	Collect complaints, medical history, carry out examination of the child and additional methods of examination in pathology of the musculoskeletal system.
6.Pharmacology and Clinical Pharmacology	Pharmacology, pharmacodynamics and pharmacokinetics of drug groups that are used in the surgical pathology. Calculate doses of drugs in the provision of emergency care and different routes of administration
7. Traumatology and ortopedia	To carry out differential diagnostics and to substantiate methods of diagnostics, treatment of various forms of pathology of the musculoskeletal system in children.

4. Tasks for independent work in preparation for the class.

4.1. The list of basic terms, parameters, characteristics that a student must learn in preparation for the class

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Term	Definition.
1. Dysplasia of the hip joint	Underdevelopment of the swivel and thigh elements.
2. Congenital dislocation of the thigh	Combination of pathological relationships of the femoral head with the acetabulum and dysplasia of the entire area of the hip joint
3. congenital tick-born	Persistent cast-flexion contracture of the foot
4. congenital torticollis	a deformation characterized by an incorrect tilting of the head to the side and turning the face to the opposite direction.

4.2 Thereotical questions for the lesson:

1. Congenital dislocation of the thigh. Early diagnosis.

2. Congenital hip dislocation. Research methods.

3. Treatment of congenital hip dislocation in children of the first year of life.

4. Treatment of congenital hip dislocation in older children.

5. Congenital foot-and-mouth disease. Clinic.

6. Treatment of congenital clubfootness / conservative and surgical /.

7. Congenital Rooftop. Clinic. Diagnosis.

8. Treatment of congenital torticollis / conservative and surgical

4.3. Practical tasks that are performed in the classroom.

1. To master the classification of defects in the development of musculoskeletal system

2. Recognize the main clinical manifestations of developmental disorders accompanied by respiratory failure.

3. Differentiate developmental defects.

4. Interpret auxiliary research methods: ultrasound, radiography.

5. Demonstrate the examination of a child with hip dysplasia, torticollis, clawed feet.

6. Identify the features of the developmental defects.

7. To offer an algorithm of the doctor's action and tactics of managing patients with developmental disabilities.

8. To interpret the general principles of treatment of developmental disabilities.

5. Maintenance of the subject:

Hip dysplasia refers to disorders of the development of the cartilage, ligament, capsule and muscle of the joint**. Congenital dislocation of the hip** is a severe degree of hip dysplasia, one of the most frequent deformations of the musculoskeletal system, which leads to a violation of static. The process of disruption of the normal development of the hip joint is due to the action of damaging factors in the embryonic and early fetal periods of fetal development. Disruption of the normal development of the hip joint is expressed in the flattening and incorrect shape of the acetabulum, the slow process of ossification and small size of the head of the thigh, the rotation of the proximal thigh forward, excessive

stretching of the ligament and the joint, the joint. All components of underdevelopment, manifesting themselves in varying degrees, affect the ratio of the head of the thigh and acetabulum, that is, the formation of the type of deformation. There are excitement, subluxation and dislocation.

The infant hip flexor is characterized by retention of ratios in the hip joint, but a stretched, relaxed ligament-capsule allows for easy dislocation and subsequent management of the hip head in the acetabulum (hip joint dysplasia).

With a subluxation of the thigh, the femoral head moves up and to the side, but does not extend beyond the edge of the acetabulum, the latter moderately flattened and elongated.

When dislocation of the capsule of the joint remains stretched, the acetabulum is flattened, the head of the femur is located outside the acetabulum, displacing the elastic edge of the acetabulum inside the joint, forming an interposition of the capsule and the edge of the acetabulum. As the baby grows, changes in the hip joint progress. In 15-20% of cases, the displacement is transformed into subluxation and dislocation of the thigh. Congenital dislocation of the thigh is more common in girls, the incidence of unilateral prevails over bilateral.

Clinical manifestations of congenital hip dislocation are indistinct until the time of static load. The earliest clinical symptom - a symptom of slippage (Marx-Ortolani), or management and dislocation of the femoral head - is a sign of instability of the hip joint. It is characteristic of newborns and often disappears within 7-10 days, very rarely persists up to 1-2 months. The most important clinical feature of hip joint pathology is a symptom of limitation of hip removal. Normally it is possible to divert the legs to the horizontal plane, and in the presence of dislocation there is a restriction of diversion. In addition, the signs of asymmetry of the folds of the skin of the hips, shortening of the limb, external rotation of the foot are important.

Once the static load begins, the clinic becomes expressive. Children start walking late (up to 1.5 years and later). Stroke unstable: with unilateral dislocation - lameness, with bilateral - "duck" gait. Stroke in children older than 5 years is accompanied by rapid fatigue and periodic pain in the hip joint. Gradually compensatory lumbar lordosis is formed. On examination determine the relative shortening of the limb, limitation of the removal of the thighs, external rotation, changing the shape of the limb.

The key to success in the treatment of hip joint pathology is early diagnosis in the neonatal period. The classic method of exploration of the hip joints in order to identify their pathological development - radiological examination, the most informative it is over the age of 3 months. Recently ultrasound is widely used for early diagnosis of hip dysplasia. The ultrasound classification is used to evaluate the ultrasound results.

In the treatment of success is the early use of the functional method. The main principle of the method is to achieve centralization of the thigh head on the acetabulum by gradually withdrawing and flexing the thighs, keeping them in this position while maintaining mobility in the joint until complete anatomical restoration of the hip joint. A wide swaddling, massage and therapeutic gymnastics are sufficient for the treatment of the exhalation. For the treatment of subluxation in the age from 1 month to 1 year, use an abduction tire, the Wilensky tire, the Freik pillow, Pavlik's stirrup. Fixation period of 3-5 months.

Treatment of congenital hip dislocation is the most difficult task. From newborn to 6 months use abduction permanent locking busbar. If within 2 months. failed to correct, moving to gradual control with a functional lightweight plaster cast. Children 1-2 years of age are advised to have a one-time closed exercise with circular gypsum fixation in the Lorentz I position; in the treatment process, the Lorentz II and Lorentz III provisions are provided. In children older than 2 years with congenital hip dislocation, most orthopedists recommend surgical treatment.

Neck deformities, which differ in etiology, pathogenesis, clinical picture, but are characterized by a common feature - a fixed forced position of the head and neck, is commonly called a **curvature.** There are congenital and acquired forms of torticollis. Muscle curvature is the most common congenital disorder. It is caused by malformation m. sternoclaidomastoideus, which is expressed in the replacement of her muscular tissue by connective, fibrous. The muscle is shortened and its function is impaired. The degree of muscle defect may be different. The tortuosity is more commonly affected by girls, mostly affecting the right muscle.

In the first days of life, the symptoms of congenital muscle curvature are almost imperceptible, the initial signs of the disease manifest at the end of the 2nd or early 3rd week of life. During this period, the fusiform thickening in the middle or lower third of m is detected. sternoclaidomastoideus as a result of its intranatal damage with hemorrhage and edema. This thick thick texture, easily displaced with the muscle, without signs of inflammation. It increases to a maximum of 5-6 weeks, and then gradually decreases and disappears by the 4-8th month of the baby's life. At the place of thickening there is a thickening of the muscle, its elasticity decreases, there is a lag in growth in comparison with the muscle of the opposite side. This causes the forced wrong position of the head and neck, tilting the head to the affected side and at the same time turning it in the opposite direction. In children under 1 year the deformity is not pronounced. The undiagnosed tortoise left untreated progresses, especially during the period of rapid growth of the baby, after 3-6 years. Apparent asymmetry and hemigipoplasia of the facial skeleton appear.

Differential diagnosis is performed with other types of torticollis (Klippel-Feil syndrome, additional cervical ribs, cuneiform cervical vertebrae, gingival neck, Grizzle disease, spastic and compensatory curvature).

Treatment is conservative, since the first manifestations of the disease. It consists of massage, therapeutic gymnastics, physiotherapy. Conservative treatment that has been timely initiated and carried out leads to recovery in most children. Only a small number of children require surgical correction from 2 years of age.

Congenital claw-foot is a stable leading, bending and suppinatory defomation of the foot. It is mostly found in boys and is often bilateral. The main cause of its development is a violation of the normal soft tissue of the foot and lower leg, changes in the ligaments of the foot and muscles. Changes in the skeleton of the foot are secondary.

The wrong position of the foot in the baby is detected from birth. Its main features are: 1) equinox-equine foot, flexion contraction in the ankle joint, the anterior foot is lowered, the heel is pulled up;
2) the foot-adduction is brought to the midline of the body, especially its anterior part; 3) supination - the outer edge of the foot is lowered, the inner raised, the entire foot is turned with the plantar surface inside; 4) inflection, inflection of the foot - the front of the foot is close to the heel, in connection with which in the middle section of the plantar surface forms a transverse deep fold that passes to the inner side of the foot (furrow of Adams). The foot is reduced in size. Flat heel, high, suspended. The outer bone is enlarged and significantly protrudes from the normal position. Medial bone underdeveloped, smoothed. The tibia muscles are atrophied, the tibia itself is twisted inside. Due to the deformation of the foot, children begin to walk late, characterized by walking with support to the dorsal surface of the foot, small steps.

Depending on the ability to perform passive correction of foot deformity distinguish the following degrees of glare:

I degree (light) - the components of deformation are eliminated effortlessly;

II degree (medium severity) - the movements in the ankle joint are limited, with the correction determined by the elastic resistance of the soft tissues, which prevents the elimination of some components of deformation;
III degree (severe) - movements in the ankle joint and foot are sharply restricted, deformation correction by hands is impossible.

Removal of deformity of the congenital cliché begins from the first days of life of the child. The basics of conservative treatment - manual correction of deformity and retention of the correction achieved. In mild forms of early correction is the key to recovery, in severe - preparatory stage for further stages of treatment. Manual correction of the deformation is achieved by regression gymnastics, retention of the achieved correction - soft beat on Fink-Ettigen, and in severe forms - step-correcting gypsum joints. Forms of claw-throat, which are not amenable to conservative treatment, have been operating since 2 years.

6. LITERATURE FOR STUDENTS

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