

FEATURES OF DIAGNOSIS AND TREATMENT OF CONGENITAL HIP DISLOCATION IN NEWBORNS

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<https://doi.org/10.5281/zenodo.11403742>

Abstract. *The article examines the possibilities of clinical diagnosis of CHD in the first days of a child's life. An assessment is made of the prognostic information content and clinical significance of the primary orthopedic examination of newborns, certain features of CHD are identified with an eye to the development of methods for orthopedic correction, treatment and prevention of initial signs of CHD.*

Keywords. *genetic medicine, congenital diseases of the musculoskeletal system (MS), congenital hip dislocations (CHD)*

Introduction. Despite the steady growth of civilization and social formations, improvement of working conditions, living conditions, nutrition and medical care for the population, the development of new areas of medicine, including genetic medicine, congenital diseases of the musculoskeletal system (MS) still remain one of the serious vices of modern society bringing suffering to both parents and children[1,2,3,7].

Although specialists carry out preventive examinations of children in maternity hospitals, there are nevertheless frequent cases when children are discharged with an unidentified pathology of the musculoskeletal system. Therefore, diagnosis and initiation of treatment for this pathology in newborns in a maternity hospital is of utmost importance.

In this light, one of the acute problems of congenital diseases of the musculoskeletal system for our republic is congenital hip dislocations (CD).

Goals and objectives of the study. The purpose of this study was to study the possibility of clinical diagnosis of CHD in the first days of a child's life. The objective of the work was to assess the prognostic information content and clinical significance of the initial orthopedic examination of newborns, to identify individual features of CHD with an eye to developing methods for orthopedic correction, treatment and prevention of initial signs of CHD.

Materials and methods of research. This report is devoted to a retrospective study of the clinical course and orthopedic examination of 1,400 newborn children over the past six years (from 2013 to 2017) in the traumatology and orthopedic department of the Andijan Regional Children's Multidisciplinary Medical Center (ARChMMC), who were initially examined in maternity hospitals with recommendations for examinations to resolve the presence or absence of CHD in the child. In accordance with the provisions adopted by WHO, children up to 28 days old were considered newborns. Of these, from 1 day to 7 days (early period of newborns - perinatal period) - 771 (55.1%) children, from 8 days to 28 days - 629 (44.9%) (late period of newborns).

Boys made up 780 (55.7%), girls 620 (44.3%). Summary data is presented in table -1.

All subjects underwent anthropometric studies to determine the maturity of the newborn. The average body weight varied from 3100 to 3800 g for boys, from 2970 to 3700 g for girls. Height data for boys was 50-53 cm, for girls 49-52 cm. These indicators corresponded to data for full-term newborns, in cases where weight was less than 2700, and height less than 45 cm. In these cases, the born child was considered premature, with the exception of newborn twins.

Table 1.

Distribution of the number of examined newborns by year, gender and periods of newbornhood and children with identified CHD.

Year	Quantity	Boys (B)	Girls (G)	Early neonatal period		Late neonatal period		Number of children with CHD	
				M	Д	M	Д	M	Д
2013	278	151	127	98	78	53	49	10	13
2014	275	149	126	67	69	82	57	13	19
2015	282	148	134	79	84	69	50	9	16
2016	271	149	122	81	71	68	51	11	13
2017	294	160	134	76	68	84	66	14	18
Total	1400(100%)	780(55,7%)	620(44,3%)	771 (55,1%)		629 (44,9%)		136 (100%)	

In order to make it possible to clinically diagnose CHD in the first days of a child's life, in which limited movements or some other signs of pathology in the hip joints (HJ) were identified, a targeted study was performed according to the examination protocol:

1. Determination of the volume of passive abduction limitation in the hip joint, which was detected in 136 (9.7%);
2. Identification of asymmetry of skin folds on the lower extremities, which were identified in 47 (34.6%);
3. Determination of relative shortening and the presence of external rotation of the lower limb, which were detected in 52 (38.2%);
4. Determination of the presence of the "slipping" symptom (Marx-Ortolani symptom), which was detected in 78 (57.4%).

Table 2 presents generalized data on newborn children with various clinical signs of pathology in the hip joints (HJ).

Table 2.

Distribution of newborn children with CHD depending on clinical signs and neonatal period

Clinical signs	Total number of newborns with CHD		Early neonatal period		Late neonatal period	
	Abc.	%	Abc.	%	Abc.	%
Passive abduction limitation	136	100	18	13,2	116	86,8
Asymmetry of skin folds	47	34,6	6	12,8	41	87,2
Relative shortening and presence of external rotation	52	38,2	6	11,5	46	89,5
Symptom of "slipping"	78	57,4	70	89,7	8	10,3

Results and discussions:

Based on the study, we identified a number of features in the process of early diagnosis, prevention and treatment of CHD.

The orthopedic examination protocol for all 1400 newborns began with determining the amount of passive abduction limitation (PAI) in the hip joint. The symptom of PAI was identified

in 136 (9.7%) newborns, who were subsequently diagnosed with a left-sided dislocation in 47 (34.6%) cases; in 67 (49.3%) newborns, right-sided and 22 (16.2%) had bilateral dislocation.

The symptom of POP, characteristic of CHD, is practically not observed in newborns in the first hours and days of life, if present, but can occur against the background of painful restrictions on the amplitude of movement in the hip joint. An irreparable mistake is made when a child's crying and restlessness is taken as an adequate reaction. This report confirms that this sign is constant and most reliable in the late stages of newborns with CHD.

During further observations of the general population of newborns and their examinations in 18 (1.3%) newborns, it was found that the presence of PAI, as an identified symptom, is a companion to other pathologies of the lower extremities found in newborns, such as physiological hypertonicity 14 (1%), spastic paralysis 1 (0.07%), muscle contracture 2 (0.14%) or with an anomaly of the proximal femur 1 (0.07%) (for example, congenital shortening of the femur).

A special place is given to the examination of newborns during the period when there is a monthly increase in body weight, which is characterized, among other things, by emphasizing the designations of the so-called external anthropometric divisions that continue to form the body of the newborn - skin folds. In this contingent, if there were suspicions of CHD, we especially carefully carried out a comparative examination of skin folds, which made it possible to identify the presence of skin fold asymmetry (ASF) on the thigh and buttocks, identified in 47 (34.6%) newborns. The characteristics of the ACJ were the difference in localization levels, their uneven number, the depth of the folds and their proximal location.

The absence of folds on the thigh and buttocks was also considered a sign of the presence of ACJ. When identifying the presence of ACS in patients with bilateral CHD, it is particularly difficult, since there is smoothness of the latter on both sides. Identification of the outlines of skin folds in these cases is possible after imparting physiological positions (flexion, extension) and when performing passive movements of the lower extremities.

When examining 52 (38.2%) newborns of the late period, i.e., in the period from 3-9 weeks of age, a symptom of relative shortening (RS) and the presence of external rotation (ER) of the lower limb was revealed. The reasons for examining newborns in these cases were complaints from parents that the child reacted by crying or grimacing when swaddling. In all cases, the examination of this contingent determined the presence of a rotated limb. Additional signs of OU and HP were determined by recognizing differences in the location of the levels of the knee joints in extended, bent, and positions close to the abdomen. Despite the fact that these symptoms are largely visual characteristics, they should have the highest index of suspicion among health care workers and parents of newborns with suspected CHD.

An analysis of the examination of 78 (57.4%) newborns with the identified symptom of "slipping" showed that this symptom is the earliest cause of CHD, which is diagnosed already in the first hours after the birth of the child and persists throughout the entire perinatal period. To determine this symptom, examination skills are required, since often due to varying degrees of symptom severity during the initial examination of newborns, when the hips are abducted, the displaced head slides easily. Therefore, in these cases, we used a technique for identifying the symptom of "slipping" based on the principle of a lever with the knee joints fixed in space. The technique is based on supporting the thigh in the middle abduction (40-500) and alternating pressure from the fingers located on the outer surface of the thigh anteriorly and vice versa, pressure from the thumb posteriorly, the femoral head is brought into a state of displacement-

sliding, which is felt by the hands of the examiner. The use of this technique in 26 (19.1%) newborns, whose joint was initially assessed as normal, made it possible to establish the presence of this clinical sign of CHD.

As experience shows, in order not to miss the “slipping” symptom, daily examinations of newborns are necessary, since the child may tense his muscles during the first examination, which will not allow this symptom to be detected. Sometimes crepitus, a clicking sound in a joint, is mistaken for a symptom of “slipping.”

In the position of flexion and abduction of the legs, which children occupy independently in the first week of life in the presence of the “slipping” symptom, the femoral head is normally centered in the socket, but attempts to twist the legs lead to progression of the pathology.

Therefore, the final decision about the presence or absence of a child’s symptom of slipping can be made after repeated examinations of children, including in maternity hospitals.

In all cases, when one of the above-described symptoms was detected in newborns, it was considered a condition of violation of the correct centering of the femoral head in the acetabulum and this was an indication for the beginning of early treatment, which was carried out in the most gentle way possible and before the development of secondary changes in the articulating surfaces.

According to our recommendations, treatment during the first week was limited to the use of wide swaddling, which begins in the maternity hospital and is quite sufficient. This ensures constant correct centering of the femoral head in the confluence, which contributes to the reduction of the stretched joint capsule and the disappearance of the symptom of slippage. If this principle is violated, the observed constant sliding of the head along the cavity leads to the development of a formed dislocation or subluxation. It is therefore obvious that the first 5-10 days of a child’s life are decisive in the outcome of pre-dislocation.

In the process of treating congenital hip dislocation in newborns, we pay special attention to the prevention of pain contractures. Treatment should take place against the background of calm behavior of the child. If there is the slightest concern on the part of the child, we point out to parents the need to immediately contact their doctor.

We do not use rigid fixation methods in newborns. They can lead to non-physiological positions of the legs, circulatory disorders with the subsequent development of dystrophic processes in the head of the femur. Painful contracture in the hip joints was observed in only one child aged 10 days. By taking appropriate measures in a timely manner (reducing the abduction of the legs, thermal procedures in the groin areas), we managed to avoid the development of degenerative processes in the femoral heads in this child.

It is necessary to indicate the specifics of managing a child with the symptom of slipping after discharge from the maternity hospital. The orthopedist at the clinic, not finding a symptom of slippage in the child on the 7-10th day of his life, ignores or simply does not attach importance to the entry in the exchange card about its presence.

An irreparable mistake is made when the child’s crying and restlessness is mistaken for an adequate reaction. When establishing an IVB, it is considered erroneous to treat only with wide swaddling or diverting pads such as a Freik pillow. Thus, for example, an examination of 20 patients at the age of 3 months, who were treated with a treatment strategy using wide swaddling, radiologically revealed a deterioration in the formation of TB: asymmetry of the “h” value or its decrease on both sides by 2-4 mm, in 3 In cases of joints, the acetabular angle was increased to 400.

Starting from the second week, it was recommended to use an abduction pad and socks with straps (such as Pavlik stirrups), which leads to hip flexion at an angle of 90° and abduction to 70-80°, and this, in turn, ensures the necessary Lorenz-I position.

The range of motion maintained between the angle of 90° and the angle at maximum flexion of the hips in the hip joints is a condition for active movement of the legs, which helps maintain normal muscle tone.

The use of abductor pads and socks with straps allowed us to clinically and radiologically achieve normal hip joints in 45 (33.1%) children by the age of 3 months. Sometimes doctors, with symptoms of slipping or unclear cases of limited hip abduction in newborns, prescribe hip abduction exercises, especially passive rotational movements in the hip joints. Such development of the joint prevents contraction of the hip joint capsule, stretches the adductors, and thereby blurs the clinical picture of the dislocation. In 6 (4.4%) newborns in the late period (4-6 weeks), who were preceded by physical treatment, we could not clinically determine CHD. The diagnosis of CHD was made after X-ray examination.

Thus, based on the clinical observation of newborns with VHD, who were identified with limited movements in the hip joint, the essence of treatment was to ensure constant correct centering of the femoral head, which contributed to the reduction of the stretched joint capsule and the disappearance of the above-described symptoms. Violation of the principles of treatment leads to the development of a fully formed dislocation. The range of motion maintained between the angle of 90° and the angle at maximum hip flexion is a condition for active movement of the legs, which helps maintain normal muscle tone.

Conclusions: 1. Correct interpretation of the detected symptoms in this category of newborns in the first 5-10 days of the child's life are decisive in the outcome of a specific congenital pathology.

2. With early diagnosis and adequate treatment, CHD in newborns allows one to achieve good results by 3-4 months of their life, which is confirmed by x-ray methods.

3. A diverting pad with strap socks is a gentle and effective way to treat CHD in newborns.

4. In each specific case, when one of the listed symptoms is identified, differential diagnosis is necessary, since these symptoms may be signs of other pathologies of the lower extremities in newborns.

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