

**Objective of study.** To implement the method of osteosynthesis in children in order to protect the bone regeneration structures.

**Material and methods.** In the last five years combined fine osteosynthesis was performed in 29 children aged between 3 and 15 years. The following fractures were determined: complicated humeral fractures - 5 children, femoral fractures - 18 patients, leg fractures - 4 patients, and clavicle fractures - 2 patients. In diaphyseal forearm fractures with indications for surgical treatment, osteosynthesis was performed with pins or elastic Bogdanov rods. Combined osteosynthesis was performed in children with diaphyseal humeral fractures (spiral, oblique, comminuted with major fragments and displacement) with pins inserted from the distal (lateral and medial) metaphyseal side through the bone canal, across the fracture level and up to the upper part of the humerus. Thus pins have three support points (introduction, crossing and the inner part opposite to the upper one). The stability was ensured by osteosynthesis performed with cerclage wiring. In complicated diaphyseal femoral fractures, combined osteosynthesis was performed with antegrade elastic intramedullary rod and cerclage wiring. In diaphyseal distal femoral fractures, osteosynthesis was performed analogously to that in humeral fractures. In complicated diaphyseal fractures of the leg, combined osteosynthesis was performed with pins inserted distally and cerclage wiring.

**Results.** Fragments were consolidated in all operated children. No cases of pseudoarthrosis or post-traumatic deformity were recorded. The usual treatment for recovery allowed to restore the movements in the immobilized joints.

**Discussions.** The method of combined osteosynthesis in complicated diaphyseal fractures in children has a major priority, protecting periosteal and endosteal tissues that are severely affected in osteosynthesis with screwed plates or massive locked intramedullary rods. Biomechanical researches (Muleret al., 2011) have objectified the priorities of cerclage wiring. Intramedullary osteosynthesis with thin elastic rods or thick pins protects the endosteum; the pins are crossed through the bone canal mechanically but not electrically.

**Conclusion.** Combined osteosynthesis of comminuted complicated diaphyseal fractures of the humerus, femur and tibia in children have led to good results, with absence of complications. There were used modern, fine and elastic fixators associated with cerclage wiring, thus protecting the periosteum, endosteum and cortical bone.

**Keywords:** complicated fractures, fine osteosynthesis.

## ECHOCARDIOGRAPHY CRITERIA FOR THE COMPRESSION OF THE HEART IN CHILDREN WITH FUNNEL CHEST



**N.F. Priyma, I.A. Komolkin, V.V. Popov**

*State budget institution of higher professional education, Saint-Petersburg State Pediatric Medical University, Ministry of Health of the Russian Federation, Department of Pediatric Surgery, Russian Federation, Saint-Petersburg*

Echocardiography performed in 30 children aged 4 to 18 years, with funnel chest of the second and third degree. The study was conducted by standard methods. The survey found changes of heart. In 12 children changed the shape of the right ventricle. In two cases observed change in the geometry of the right atrium. Changed the kinetics of the interventricular septum. In 5 cases revealed hypokinesia in 2 cases of hyperkinesia and in 2 cases asynchronism reduce the interventricular septum. In 7 children recorded an increase in speed characteristics of diastolic flow through the tricuspid valve.

**Keywords:** funneled deformation of a thorax, echocardiography, Doppler effect

## CONDUCT TREATMENT OF JUVENILE SLIPPED EPIPHYSES



**Gr. Rusanovschi, Iu. Romasco, N. Curca, I. Bogdan, V. Borovic, S. Ionița**

*IMSP SCMC "V.Igantenco", Chișinău, Republic of Moldova*

**Introduction:** mostly occurs in young adulthood. The disease occurs with frequency of 4-5 cases per 100 000 inhabitants, and patients with juvenile slipped epiphyses (JE) represent 0.5-5% of children with orthopedic pathology. The ratio of boys and girls - 3:2. Bilateral involvement is described in 20% of patients.

**Discussions:** JE was described for the first time in 1572. Due to the relative rarity of the disease, many physicians are not aware of the existence of it. Until now the vast majority of children with JE were getting treatment lately.

JE etiology is still far from being fully disclosed. The factors are well established: hormonal disorders, genetic predisposition, as well as hard exercises and micro traumas. Endocrine-orthopedic symptom of the disease is the breaking the correlation between sex hormones and growth hormones. Those two groups of hormones play an important role in the development and delayed puberty of the epiphyseal plates. According to some authors the obesity, anteversion on proximal femoral and bones immaturity are the causes of JE.

The disease pathogenesis is a slow displacement of proximal femoral epiphysis down and dorsal. With JE the head of the femur remains acetabular fossa, so both femoral neck and femur lose contact with him. This balance is rotating around its longitudinal axis, "flips" to exterior and positions member in the position of external rotation.