

to 3 children, and Gofman device in 4 children and to 6 children with pins and screws, metal plate and screws 2 children. Complications were not found.

Conclusions: Osteosynthesis of diaphyseal fractures in multiple injury requires combining materials from internal and external fixation with minimal trauma, lasting attachment, so will be improved the life quality in patients with politrauma.

Keywords: open osteosynthesis, politrauma, children.

EXTERNAL OSTEOSYNTHESIS IN COMBINATION WITH THE USAGE OF THE ARTIFICIAL COMPOSITE BIODEGRADED IMPLANT AT TREATMENT OF PSEUDOARTHROSES AND PATHOLOGICAL FRACTURES AT CHILDREN



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Work's goal: rising of efficiency of children's treatment with innocent osteal lesions of a locomotorium and the acquired nearthrosis.

Material and methods. In Clinic of Vertebrology, Orthopedics and Traumatology of the "N.Gheorghiu" Scientifically-Practical Center of Children's Surgery 39 children, aged between 1,8 and 17 years, with posttraumatic pseudoarthrosis and pathological fractures were operated. The method of treatment consisted in using of an osteosynthesis in the form of applying external fixation devices in combination with intra focal introduction of the biodegraded implant. Biodegraded implant containing 70 - 80% of the salt component in the form of hydroxyapatite crystals with nanoscale (43-45 nm), the rest - the biopolymer (collagen), the composite has a porosity of 70% to ensure the rapid lysis of cells in the body. Material was introduced into the defect as an injection and open way. After applying of the device of external fixation, intra focal endermic puncture by filling of a cavity with material in combinations with an antibiotic for 70% was carried out to patients with pathological fractures against the background of dystrophic osteal cysts-11, fibrous dysplasia-9, acquired nearthrosis: posttraumatic-7 and osteomyelitis-6 consequences. The volume of filled bone's defect varied from 4cm³ to 200cm³. Open surgical intervention with excising of tumor to a healthy tissue and filling of the formed defect with plates with an antibiotic was carried out to 6 patients with pathological fracture against an osteoblastoclastoma, after applying of the device of external fixation.

Results. At all patients after 1 year there came full reorganization of the pathological center.

Conclusion.

1. Injection introduction of a composite allows providing an adnation of osteal fragments without operation in case of the slowed-down consolidation of fracture or nearthrosis.
2. Biodegraded composite materials have essential advantages in comparison with an allobone (ability to stimulate reparative processes and to be utilized by the organism, development primary micro vascular canal).
3. Composite is capable to provide an angiogenesis in its introduction zone and the accelerated ossification in the field of defect.

Keywords: an osteosynthesis, children, a pseudoarthrosis, the biodegraded implant.

OSTEOSYNTHESIS IN INTRAARTICULAR FRACTURES IN CHILDREN



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Objective of study. Intraarticular fractures in children are the most complicated fractures, but failures in diagnosis, treatment tactics and technique of these fractures lead to unsatisfactory results, occurrence of post-traumatic deformities, disorders of function and growth.

Material and methods. Over 50 years we have operated approximately 2,000 children with intraarticular fractures, aged between 10 months and 18 years. Over 95% of those operated had complicated elbow fractures and follow-up consequences. The surgical method included: an appropriate approach for perfect adaptation of fragments without muscle and tendon sections, without osteotomies; restoration of traumatized muscles; perfect reposition of fragments; relatively stable and fine

osteosynthesis with 3 Kirschner pins, and external plaster cast immobilization. After immobilization and removal of pins, the rehabilitation treatment was performed through physical therapy with independent forceless and painless movements. **Results.** Treatment outcomes depend on the duration after trauma, the quality of anatomical adaptation of fragments, protection of periarticular tissues, fine fixation of fragments with pins, prevention of hematomas and bone consolidations. The compliance with all the requirements of surgical treatment allowed to obtain good results in over 96% of operated children.

Discussions. Intraarticular fractures in children, regardless of their age and degree of fracture displacement, require surgical treatment in specialized clinics, conducted by highly qualified specialists. Pseudoarthrosis in intraarticular fractures develops after orthopedic treatment or poorly performed surgical treatment. Fine osteosynthesis with Kirschner pins ensures the necessary stability. Osteosynthesis with plates and bolts is inadmissible, while olecranon osteotomy is a major error. Any postoperative varus deformity should be considered as an unsatisfactory result. This deformation may trigger secondary distal humeral epiphysiolysis with irreversible disability. For this reason, we disagree with the views of some authors who consider varus deformity in children up to 20 degrees a good result and varus deformity up to 40 degrees is considered a satisfactory result, which, in fact is erroneous for child development.

Conclusion. In intraarticular fractures in children it is necessary to appreciate in detail the intricate anatomical and topographical changes. The surgical treatment of complicated fractures has to be performed in specialized clinics by highly qualified doctors in the field.

Keywords: intraarticular fractures, osteosynthesis.

OSTEOSYNTHESIS IN MULTIPLE FRACTURES IN CHILDREN



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Objective of study. To estimate the surgical treatment tactics and technique in multiple fractures in children in order to improve results.

Material and methods. Over the past 25 years 131 children with multiple fractures of long bones received specialized treatment in the pediatric orthopedic clinic. There was prevalence of male patients (59.5%) aged over 10 years (65.6%). Of the total number of children, 294 fractures were assessed. Of them, 81 femoral fractures, 66 forearm fractures, 65 leg fractures, 60 arm fractures and others. Fractures due to road accidents prevailed (over 52%). After clinical and laboratory examinations carried out in intensive care unit and necessary preparation, the children were subjected to surgery under general anesthesia in order to appropriately reposition fragments and to perform osteosynthesis (except 29 fractures without displacement of fragments).

Results. In metaphyseal, epi-metaphyseal, epiphyseal, and metaphyseal-diaphyseal fractures osteosynthesis was performed with Kirschner pins through cross insertion. In all operated cases fragments were consolidated without complications. Intramedullary osteosynthesis with metal rods, especially elastic ones was used in transversal diaphyseal fractures of the femur and forearm; while in oblique and spiroid diaphyseal fractures, osteosynthesis was additionally associated with cerclage wiring. Stable osteosynthesis was performed with the external Ilizarov apparatus in diaphyseal fractures of the leg. In diaphyseal humeral fractures, osteosynthesis was performed with elastic rods or Ilizarov pins, using the principles of TEN method. In open fractures, after primary surgical wound treatment, osteosynthesis was performed with pins or external devices.

Discussions. The outcomes of surgical treatment in multiple fractures directly depend on the location of fractures, the quality of surgery, compliance with the requirements of biological osteosynthesis with endosteal and periosteal protection. We consider inadmissible to perform on children osteosynthesis with massive screwed plates as well as major removal of periosteum from bone.

Conclusion. The basic treatment in multiple fractures is the surgical one, being carried out in one stage in the following order: open fractures, intra-articular fractures, fractures of the femur, leg, upper arm, forearm; biological minitraumatic osteosynthesis.

Keywords: multiple fractures, osteosynthesis, baby.

COMBINED FINE OSTEOSYNTHESIS OF COMPLICATED DIAPHYSEAL FRACTURES IN CHILDREN



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