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THE USE OF TRIPLE PELVIC OSTEOTOMY IN THE TREATMENT OF CONGENITAL HIP DISLOCATION IN CHILDREN

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Abstract:

The article presents an analysis of the results of treatment of 18 patients (22 joints) treated for residual hip dysplasia. The age of the patients ranged from 7 to 14 years. Among the patients there were 6 boys and 12 girls. The examination of the patients was carried out using clinical, radiological and computed tomography methods with the construction of a three-dimensional model of the hip joint. satisfactory and unsatisfactory. Excellent treatment results were obtained in 4 patients. Good results were noted in 10 patients. Satisfactory results were noted in 4 patients.

Keywords: Triple osteotomy, dysplasia, hip joint, coxarthrosis.

Introduction

Background: Despite the success achieved in the diagnosis and treatment of hip dysplasia, the problem of treating residual hip dysplasia remains one of the most relevant in pediatric orthopedics. 20-50% of degenerative-dystrophic diseases of the hip joint occur as a result of residual hip dysplasia. Coxarthrosis of dysplastic origin accounts for 60-80% of all cases of coxarthrosis [3].

A study of the literature shows that regardless of the initial state of the joint, with increasing age of children, there is an increase in unsatisfactory and a decrease in positive outcomes. To date, the problem of surgical treatment of residual manifestations of congenital hip dislocations in older children and adolescents remains very relevant [5].

Traditionally, the leading methods of surgical correction of hip joint instability in older children and adolescents are interventions on the proximal femur, i.e. its "fitting" to the dysplastic, incorrectly oriented acetabulum, while the condition of the acetabular component is further decisive for the "fate" of the joint [2]. In dysplastic coxarthrosis, in 80% of cases, the leading component of dysplasia is the pelvic dysplasia, so osteotomies of the femur are not able to restore normal biomechanical relationships in the hip joint [4]. Pelvic osteotomies must meet the following conditions: the congruence of the articular surfaces must be restored, the femoral head must be covered with articular hyaline cartilage, the biomechanics of the hip joint must not be disturbed, and it must not cause an increase in internal joint pressure. The possibilities

of hip joint reconstruction are significantly reduced after synastosis of the bottom of the cavity, which occurs at the age of 10-12 years. In these cases, mobilization of the entire acetabular region is required, which is impossible without simultaneous supraacetabulum, pubic and ischial osteotomies. In adolescence and young adulthood, acetabular transposition after triple osteotomy of the pelvis is the most justified from a clinical and biomechanical point of view [1]. The complexity of the problem lies in the fact that the defects of the acetabulum formed at this age are: thickening of the bottom, deficiency of the head coating with a decrease in the inclination of the cavity, often close to the vertical location of the entrance to the cavity, impaired sphericity, insufficient depth of the acetabulum, discrepancy between its size and shape and the femoral head, the initial signs of deforming coxarthrosis [1].

Objective. Study of the results of the use of triple pelvic osteotomy in the treatment of residual hip dysplasia.

Material and methods. Our report is based on the analysis of the results of treatment of 18 patients (22 joints) treated for residual hip dysplasia. The age of the patients ranged from 7 to 14 years. Among the patients there were 6 boys and 12 girls. The examination of the patients was carried out using clinical, X-ray and computed tomography methods with the construction of a three-dimensional model of the hip joint. 9 patients underwent triple pelvic osteotomy according to the technique proposed by A.M. Sokolovsky, one patient underwent triple osteotomy with mini-arthrotomy, and 8 more patients underwent triple pelvic osteotomy in combination with subtrochanteric corrective osteotomy of the femur. Triple pelvic osteotomy according to the method of A.M. Sokolovsky is performed from one anterior Peterson approach. During the operation, only two muscles are completely dissected: m. sartorius and m. iliopsoas. The most difficult stage of the operation is an osteotomy of the ischial bone. With osteotomy of the ischial bone, the depth of the wound increases, which makes it difficult to perform osteotomy, as the author himself points out. In cases where the cervico-diaphyseal angle is greater than 1450, the antetorsion angle is greater than 45-50°, the isolated version of the triple pelvic osteotomy is not able to compensate for changes in the proximal femur. In these cases, it was necessary to combine triple pelvic osteotomy with subtrochanteric osteotomy of the femur. In such cases, for osteotomy of the ischial bone, the technique proposed by N.M. Belokrylov was used, that is, they passed between the osteotomized fragments of the femur, which greatly improves the visibility of the ischial bone and makes this stage of the operation safer. Osteotomy of the iliac and pubic bones without periosteal detachment can significantly reduce blood loss and reduce the trauma of the operation. In patients who underwent triple pelvic osteotomy with subtrochanteric corrective osteotomy of the femur, after rotation of the acetabular fragment between the iliac fragments, an autograft taken from the subtrochanteric region was inserted to improve the consolidation of bone fragments. The application of the principles of careful attitude to tissues, the use of medical wax and the rational use of hemostatic drugs, the rejection of periosteal detachment make it possible to minimize

blood loss during surgery. The duration of the operation ranged from 1 hour 20 minutes to 2 hours 50 minutes.

Results:

Since this technique has been used recently and we have relatively few numerical material for the study, the assessment of the radiometric results of the performed operations is preliminary. The Wiberg angle before surgery was on average 12°, after surgery it averaged 26°. The degree of bone covering before surgery averaged 0.72, after surgery in all patients it was 1. after the operation was 86°. When assessing the range of motion in the operated joints after 6 months of follow-up, all patients regained the range of motion determined before surgery. The results of surgical treatment were assessed as excellent, good, satisfactory and unsatisfactory. Excellent treatment results were obtained in 4 patients. Good results were noted in 10 patients. Satisfactory results were noted in 4 patients.

Conclusions:

The results of the use of pelvic triple osteotomy show high resolution of pelvic triple osteotomy in the treatment of residual hip dysplasia. In cases where large changes are observed in the proximal femur, it is advisable to combine pelvic triple osteotomy with corrective femoral osteotomy. We consider it expedient to further introduce pelvic triple osteotomy in the surgical treatment of residual dysplasia hip joint.

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