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ОПТИМИЗАЦИЯ РАННЕГО ПОСЛЕОПЕРАЦИОННОГО ВЫВИХА ГОЛОВКИ ЭНДОПРОТЕЗА ПРИ ДИСПЛАСТИЧЕСКОМ КОКСАРТРОЗЕ

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✓ ***Резюме***

Диспластический коксартроз относится к числу наиболее тяжелых дегенеративно-дистрофических поражений тазобедренного сустава. Количество больных, имеющих тяжелые деформации бедренной кости и вертлужной области, вследствие прогрессирования анатомо-функциональных врожденных изменений, а также в результате проведенных ранее корригирующих операций, неуклонно растет. Несмотря на значительный прогресс, достигнутый в последние годы, эндопротезирование тазобедренного сустава при диспластическом коксартрозе, по-прежнему остается серьезной проблемой. По данным многих исследований, ревизии по поводу вывиха эндопротеза у больных с диспластическим коксартрозом наблюдаются в 3 раза чаще, чем при асептическом некрозе головки бедренной кости и идиопатическом коксартрозе, и в 22,5–32 % случаев являются причиной проведения ревизионной операции.

Ключевые слова: Диспластический коксартроз, вывих эндопротеза, задняя капсулотомия.

ДИСПЛАСТИК КОКСАРТРОЗДА ЭНДОПРОТЕЗ БОШЧАСИНИ ОПЕРАЦИЯДАН КЕЙИНГИ ЭРТА ЧИҚИШ ОЛДИНИ ОЛИШНИ ОПТИМИЗАЦИЯЛАШ

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✓ ***Резюме***

Диспластик коксартроз чаноқ-сон бўғимининг энг оғир дегенератив-дистрофик касалликларидан биридир. Анатомик ва функционал туғма ўзгаришларнинг ривожланиши, шунингдек, олдинги тузатиш операциялари натижасида сон ва ацетабуляр оғир деформацияси билан оғриган беморларнинг сони доимий ривишда ўсиб бормоқда. Сўнги йилларда сезиларли ютуқларга қарамай, диспластик коксартрозда артропластика услубини бажариш ҳали ҳам жиддий муаммо бўлиб қолмоқда. Кўпгина тадқиқотларга кўра, диспластик коксартроз билан оғриган беморларда эндопротез компонентларнинг нотурғунлиги туфайли ревизиялар сон бошчасининг асептик некрози ва идиопатик коксартрозга қараганда 3 баровар кўпроқ кузатилади ва 22,5-32% ҳолларда улар ревизион жарроҳлик учун сабаб бўлади.

Калит сўзлар: Диспластик коксартроз, эндопротез чиқиши, орқа капсулотомия.

OPTIMIZATION OF EARLY POSTOPERATIVE DISLOCATION OF THE ENDOPROSTHESIS HEAD IN DYSPLASTIC COXARTHROSIS

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✓ ***Resume***

Dysplastic coxarthrosis is one of the most severe degenerative-dystrophic lesions of the hip joint. The number of patients with severe deformities of the femur and acetabular region, due to the progression of anatomical and functional congenital changes, as well as as a result of previous corrective surgeries, is steadily increasing. degenerative changes in the spine. Despite significant progress in recent years, hip arthroplasty in dysplastic coxarthrosis still remains a serious problem. According to many studies, revisions due to dislocation of the endoprosthesis in patients with dysplastic coxarthrosis are observed 3 times more often than in aseptic necrosis of the femoral head and idiopathic coxarthrosis, and in 22.5-32% of cases they are the reason for revision surgery.

Key words: Dysplastic coxarthrosis, endoprosthesis dislocation, posterior capsulotomy.

Relevance

In the last decade, significant progress has been made in the development of hip arthroplasty; a serious problem still remains arthroplasty for dysplastic coxarthrosis, in which the number of revisions, according to various authors, ranges from 32 to 58% [1–5]. Complex deformation and defects of bone tissue in the area of installation of the acetabular component of the endoprosthesis are accompanied by a high risk of early instability and dislocation of the endoprosthesis, the frequency of which ranges from 5 to 11% [6–10]. According to many studies, revisions due to endoprosthesis dislocation in patients with dysplastic coxarthrosis are observed 3 times more often than with aseptic necrosis of the femoral head and idiopathic coxarthrosis, and in 22.5–32% of cases are the reason for revision surgery [11–16]. Along with this, it should be noted that previously performed reconstructive surgeries for dysplastic coxarthrosis, concomitant muscle disorders (cerebral palsy, consequences of stroke, muscle atony, etc.) are the cause of both instability of the endoprosthesis cup and an increase in the frequency of dislocations [17]. Degenerative-dystrophic diseases of the joints are among the most common pathologies of the musculoskeletal system, among which dysplastic coxarthrosis ranks among the most common in frequency (1). It should be noted that degenerative-dystrophic diseases of the joints of various etiologies are common diseases of the musculoskeletal system and occur in 6.4-12% of orthopedic patients, accounting for more than 50% of all joint pathology (3,4). The number of patients with severe deformations of the femur and acetabular region, due to the progression of anatomical and functional changes, is steadily increasing over time. According to literature, dysplastic coxarthrosis accounts for 27% to 78% of degenerative-dystrophic diseases of the hip joint.

The prevalence of this pathology among the adult population ranges from 8% to 27%. On average, hip dysplasia accounts for 16.5% of all musculoskeletal pathologies. As a rule, the disease affects people of active working age, leading to disability in almost 30% of cases (5).

Its most characteristic signs are, first of all, the slant of the roof of the acetabulum, the disruption of the configuration of the upper edge, the shallow depth and deformed changes in its shape, underdevelopment of the anterior edge, deformation of the proximal femur, and imbalance of the tendon-muscle apparatus of the joint (2).

Despite the timely detection of congenital underdevelopment of the hip joint elements, the problem of diagnosis, treatment of dysplastic coxarthrosis and prevention of its development in the postoperative period remains far from being finally resolved.

In recent decades, total endoprosthetics has become one of the main methods of treating severe pathological changes in the hip joint, allowing the restoration of the hip's support capacity, achieving sufficient range of motion, relieving the patient of pain and lameness, and ultimately returning him to an active lifestyle (6,7). Every year, up to 1,500,000 total hip replacements are performed worldwide. According to statistics, in developed countries there is one large joint replacement per thousand people.

Many world publications contain references to the presence of pain after total endoprosthetics in patients with dysplastic coxarthrosis. In studies by some authors, pain syndrome in patients who have undergone hip endoprosthetics persists in 17–20% (16,17). According to the Swedish registry for 2002–2006, pain syndrome is the reason for repeated hip replacement in 1.2% of cases. One year after primary replacement, 14–22% of patients complain of pain, and after 10 years – about 30% (18). According to the results of a 2004 study at the Salt Lake Clinic, pain syndrome after primary total hip replacement mainly arose due to excessive offset, which subsequently led to the development of tensopathies or trochanteritis.

And the Australian orthopedist J. Herald after total hip replacement quite often noted that stenosis of the superior and inferior gluteal arteries occurs, and this is the cause of pain in the groin area [Herald, J. Unusual cause of groin pain following hip replacement (20).

Despite significant progress achieved in recent years, hip arthroplasty for dysplastic coxarthrosis remains a serious problem, with the number of revisions, according to various authors, ranging from 32 to 58%. According to many studies, revisions due to endoprosthesis dislocation in patients with dysplastic coxarthrosis are observed 3 times more often than with aseptic necrosis of the femoral head and idiopathic coxarthrosis, and in 22.5–32% of cases are the reason for revision surgery.

One of the reasons why patients are not completely satisfied with the surgery is postoperative pain. Despite the huge amount of literature, it is not possible to determine the causes of postoperative pain. From the studied sources it can be predicted that the most studied is the pain syndrome with instability of the endoprosthesis components and the development of postoperative infection. Pain syndrome with instability occurs or intensifies with movements on the affected joint or attempts to load the operated limb. The occurrence of pain in the groin and gluteal region, their intensification in the patient's sitting position, as a rule, is the cause of instability of the endoprosthesis cup. Pain on the anterior surface of the thigh and in the groin region, especially intensifying with rotational movements, indicates instability of the femoral component of the endoprosthesis. Pain after endoprosthetics may also occur in the presence of an infectious process in the joint area. Pain in infectious complications is constant, its intensity increases over time, but also increases with movement and loads.

It should be noted that the frequency of postoperative pain in patients with dysplastic coxarthrosis is higher than in idiopathic coxarthrosis or, for example, those operated on after a hip fracture.

According to foreign sources, over an observation period of one to five years, postoperative pain syndrome in patients operated on for dysplastic coxarthrosis is up to 12%, in patients who underwent endoprosthetics for idiopathic coxarthrosis it is about 7%, and in patients who underwent prosthetics for a femoral neck fracture it is 5.8-6%. (8,14). The cause of pain in the postoperative period is often the remaining wrinkled joint capsule, since the pain receptors are located in the joint capsule and the degree of pain depends on the remaining area of the joint capsule.

During endoprosthetics of dysplastic, idiopathic or traumatic coxarthrosis, the remaining secondary altered joint capsule is transformed, tightened and over time becomes cicatricially deformed. Often during surgery, the posterior part of the hip joint capsule in dysplastic coxarthrosis is visualized as wrinkled and secondarily altered with the formation of inflammatory-scarring strands. Given this condition, one should always pay attention to the condition of the capsular-ligamentous apparatus during surgery.

Purpose of the study. As it became clear, the severity of postoperative pain intensity is most likely associated with the condition of the capsule-ligamentous apparatus of the hip joint. Therefore, we attempted to study the condition of the hip joint capsule in three pathological conditions, dysplastic, idiopathic coxarthrosis, and in patients operated on for a femoral neck fracture, by performing intraoperative posterior capsulotomy.

Materials and methods

We observed 166 patients in the Department of Orthopedics and Trauma Consequences of the Bukhara Regional Multidisciplinary Medical Center from 2017 to 2022. 50 patients operated on for idiopathic coxarthrosis, 30 patients operated on after a femoral neck fracture and 86 patients with dysplastic coxarthrosis, grades II-III - 56 (65%) women and 30 (35%) men who underwent total hip arthroplasty. Dysplastic coxarthrosis grade II was observed in 34 (39%) patients, grade III — in 52 (61%). In 66 (76%) cases, the posterior capsulotomy technique was used during surgery, mainly with cementless fixation of the endoprosthesis components, depending on the anatomical shape of the medullary canal of the femur, femoral components with metaphyseal, metaphyseal-diaphyseal or diaphyseal type of fixation were used; in 23 cases, a cement method of endoprosthetics was used, mainly in patients with osteoporosis.

Results and discussions

The main reason for the complexity of total endoprosthetics in dysplastic coxarthrosis is the need to reconstruct the acetabulum itself and sometimes the proximal femur to eliminate subluxation or

dislocation of the endoprosthesis head and restore the length of the limb after endoprosthetics, which may be accompanied by pain syndrome (9,10). In this case, it is necessary to take into account changes in the anatomy at the level of all segments of the joint: bone, cartilage, capsule and ligaments.

During endoprosthetics of patients with dysplastic coxarthrosis, it is necessary to take into account two interrelated factors such as restoration of range of motion and full support ability of the operated limb in the early postoperative period from 1 to 3 days, so basically such operations have to be done on patients of average age and even in some cases on young patients, when there is a strong pain syndrome, in order to integrate them into work activities.

In addition to pain syndrome, patients with dysplastic coxarthrosis visually and clinically experience external rotation of the lower limb, caused by constriction of the anterior capsule and wrinkling of the posterior capsule of the hip joint. Which in turn can lead to early postoperative anterior dislocation of the endoprosthesis head. To reduce pain syndrome and anterior dislocation, we proposed “a method for preventing early anterior dislocation after total hip arthroplasty for dysplastic coxarthrosis FAP 2637”, including longitudinal dissection of the broad fascia of the thigh in the middle of the greater trochanter, dissection of the joint capsule along the intertrochanteric line from the base of the femoral neck along its upper edge to the upper posterior edge of the acetabulum, dislocation and osteotomy of the femoral neck, installation of a total prosthesis, layer-by-layer suturing of the wound, characterized in that after dislocation and osteotomy of the femoral neck, a total resection of the posterior capsule and coagulation of the edges of the resected capsule of the hip joint are performed.

We then evaluated the results of total hip arthroplasty in these three conditions. In these cases, special attention was paid to a thorough assessment of the anatomical, local data, neurological status, psychological readiness for surgery, and individual preparation for postoperative behavior of patients. When assessing the nature of previously performed operations on the hip joint, the anatomical state of the hip joint, the presence of a defect in the acetabulum, the volume of the defect in the anterior, superior and posterior walls were assessed as predictors of the risk of endoprosthesis dislocation and postoperative pain syndrome.

The femoral head shape and loss of sphericity, as well as the neck-shaft relationship (valgus or varus position, degree of torsion of the proximal end of the femur) were assessed. These factors must be taken into account at the preoperative planning stage, as they affect the endoprosthetic techniques

In the system of preventive measures to reduce the risk and prevent dislocations and postoperative pain syndrome during endoprosthetics of patients, especially with dysplastic coxarthrosis of II-III degree, attention was paid to preoperative preparation of patients, during which the nature of contracture in bilateral joint damage, the relationship with concomitant pathology of the spine and knee joints and their impact on possible complications in the postoperative period were assessed.

In a number of cases with pronounced soft tissue atrophy at the preoperative stage, patients underwent rehabilitation treatment aimed at restoring muscle tone and increasing muscle mass in the hip joint area by prescribing massage and electrical muscle stimulation. In case of bilateral damage to the hip joint in dysplastic coxarthrosis, the joint with more pronounced functional disorders and pain component, which were determined by assessing the pain threshold and using a visual analogue scale, was operated on first.

Compensation for the shortening of the second, non-operated limb was achieved by selecting orthopedic shoes or heel pads for standard shoes. The average interval between joint surgeries was 1 to 3 months. In the early postoperative period, for prevention purposes, all patients were given a plaster derotator on the operated limb for the first 10 days, and differentiated tactics were used to restore joint function and patient mobility, taking into account the postoperative risk assessment.

All patients who underwent posterior capsulotomy were recommended bed rest for 1 to 2 weeks, while electrical stimulation of the thigh and shin muscles, isometric gymnastics, exercise therapy on an artroban 3 times a day, and lymphatic drainage massage were prescribed. In the interval between passive gymnastics on an artroban, patients were taught the skills of active exercise therapy for the hip joint.

In the late postoperative period, the stability of the endoprosthesis components, the functional state of the joint and aseptic instability were monitored.

This tactic of managing patients after endoprosthetics for dysplastic coxarthrosis allowed us to minimize the risks of postoperative pain syndrome and dislocation of the endoprosthesis in the early stages after surgery. Analysis of immediate and remote results showed that dislocations of the

endoprosthesis after 66 hip arthroplasties in patients with dysplastic coxarthrosis occurred in 1 case (0.6%) due to non-compliance with the regimen, and postoperative pain syndrome was also observed in 4 patients (6.0%). In the studied group of patients with dysplastic coxarthrosis, female patients predominated, and at the age of over 50 years, the pathology was noted in 32 (78%) patients, which we considered as an additional risk factor for the occurrence of endoprosthesis dislocation. The results of the studied patients with idiopathic coxarthrosis and patients operated on with a fracture of the femoral neck were significantly better, since such complications were not observed at all. Determination of pain on the VAS scale (Visual Analog scale) in patients using the posterior capsulotomy method.

Table 1.

VAS scale	**Before surgery**	**After the operation on the 3rd day**	**After 3 months**	**After 6 months**
No 0 point	**0**	**44**	**48**	**62**
Weak 2 points	**1**	**13**	**17**	**4**
Moderate 4 points	**2**	**4**	**1**	**0**
Moderately strong 6 points	**17**	**4**	**0**	**0**
Strong 8 points	**18**	**1**	**0**	**0**
Unbearable 10 points	**28**	**0**	**0**	**0**

Table 1 shows that when performing the posterior capsulotomy method, there is a gradual and, in some cases, complete disappearance of postoperative pain. Of the 66 patients operated on using this method, 62 (94%) patients were completely free of pain within 6 months. In 4 cases, mild pain persisted for up to 6 months after the operation.

Conclusion

1. At the stage of preoperative planning of endoprosthetics in patients with dysplastic coxarthrosis grades II-III, it is necessary to conduct a thorough analysis of all risk factors for the development of postoperative pain and dislocation of the endoprosthesis, and take them into account when performing the operation.

2. Performing total resection of the posterior capsule and coagulation of the edges of the resected capsule of the hip joint allows to reduce pain syndrome after total endoprosthetics, especially in patients with dysplastic coxarthrosis of grades II-III, and also increases the effectiveness of surgical treatment with earlier activation and rehabilitation of patients.

LIST OF REFERENCES:

1. Norkin I.A., Petrov A.B., Zhadenov I.I., Kovaleva I.D. et al. Biological model of dysplastic coxarthrosis (experimental study) // Traumatology and Orthopedics of Russia. - 2006. - No. 4 (42). - P. 59-63.
2. Oleynik A.E., Loskutov A.E. X-ray anthropometric analysis of acetabulum deformation in hip dysplasia from the standpoint of endoprosthetics // Orthoped., traumatology and prosthetics. - 2008. - No. 4. - P. 71-77.
3. Dreyer A.L. Deforming arthrosis (modern views, theories) // Arthrosis of large joints. - L., 2015.
4. Zorya V.I. Total endoprosthetics of the hip joint using new technologies. Complications. Proceedings of the symposium "Endoprosthetics of large joints", Moscow, 2000, pp. 35-36.
5. Mikhailov I.G. Endoprosthetics of the hip and knee joints // Treatment of patients with injuries and diseases of the extremities / Collection of abstracts: the second scientific and practical

conference of traumatologists and orthopedists of the Federal Medical and Biological Agency. - M. - 2015. - P. 61.
6. Nadeev, A.A. Hip joint endoprostheses in Russia: philosophy of construction, review of implants, rational choice / A.A. Nadeev, S.V. Ivannikov. - Moscow: BINOM. Laboratory of knowledge, 2006. - 177 p.
7. Rozhnev, E.V. Complications of the early postoperative period of primary total hip arthroplasty: author's abstract. diss. … candidate of medical sciences / Rozhnev Evgeny Valerievich. – Perm, 2007. – 26 p.
8. Parakhin, Yu.V. Remote results of reconstructive operations on the hip joint with degenerative dystrophic diseases: author's abstract. dis. ... candidate of medical sciences / Parakhin Yuri Veniaminovich. - M., 2006. - 18 p.
9. Schmalzried T.P. Metal-on-Metal: Back to the future. J. CCJR, 2011, Las Vegas, p.139-140.
10. Gausden EB, Parhar HS, Popper JE, et al. Risk factors for early dislocation following primary elective total hip arthroplasty. J Arthroplasty. 2018; 33 (5) :1432-1445.
11. Lu Y, Xiao H, Xue F. Causes of and treatment options for dislocation following total hip arthroplasty. Exp Ther Med. 2019; 18 (3) :365-373.
12. Karaismailoglu B., Erdogan F., Kaynak G. High Hip Center Reduces the Dynamic Hip Range of Motion and Increases the Hip Load: A Gait Analysis Study in Hip Arthroplasty Patients With Unilateral Developmental Dysplasia. J Arthroplasty. 2019; 34(6):1267-1272. doi: 10.1016/J.ARTH.2019.02.017.
13. Widmer D., Reising K., Kotter E., Helwig P. Correct Assessment of Acetabular Component Orientation in Total Hip Arthroplasty From Plane Radiographs. J Arthroplasty. 2018; 33(8):2652-2659. doi: 10.1016/J.ARTH.2018.02.023.
14. Mrcsed, C. Quality of life and functional outcome after primary total hip replacement / C. Mrcsed, J. Ballantyne // J. Bone Joint Surgery. – 2003. – Vol. 89B. – P. 868873.
15. Huo, M. What’s new in hip arthroplasty / M. Huo // J. Bone Joint Surgery. – 2002. – Vol. 84A. – P. 18941905].
16. The effect of age on pain, function, and quality of life after total hip and knee arthroplasty / C. Jones [et al.] // Arch. Intern. Med. – 2001. – Vol. 161. – P. 454460.
17. Lavernia, C. Thigh pain in primary total hip arthroplasty / C. Lavernia, M. D’Apuzzo, V. Hernandez, D. Lee // J. Arthroplasty. – 2004. – Vol. 19. – P.12081211.
18. Swedish Hip Arthroplasty Registry // Ann. Report. – 20022006.– 115 p.
19. Jasani, V. Pain related to the psoas muscle after total hip replacement / V. Jasani, P. Richards, C. WynnJones // J. Bone Joint Surgery.– 2002. – Vol.84B. – P. 991993.
20. Herald, J. Unusual cause of groin pain following hip replacement / J. Herald, S. Macdessi, G. Kirsh // J. Bone Joint Surgery. – 2001. – Vol. 83. – P. 1392 – 1395.

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