

THE CURRENT STATE OF THE PROBLEM OF PROVIDING ASSISTANCE TO VICTIMS WITH ACETABULAR INJURIES IN THE BUKHARA REGION

E. Yu. Valiev¹, A. S Yakhyoev², J.Yu. Jabbarov², Khasanov Z. R¹.

¹Republican Scientific Center Of Emergency Medical Care;

²Bukhar branch Republican Scientific Center of Emergency Medical Care

Abstract. In recent years, there has been an increase in patients with acetabular fractures, while the rates of unsatisfactory treatment results and disability remain high. There is a widespread trend, as well as in the Bukhara region, to increase the number of patients with injuries of the acetabulum. The difficulties of diagnosis and the choice of treatment tactics remain relevant. Low rates of active surgical tactics for treating injuries, which affects the results of treatment. There is a need for a more in-depth study of this problem with the introduction of modern methods of damage visualization and the development of minimally invasive treatment methods

Keywords. Injury, acetabulum, osteosynthesis, conservative treatment.

The frequency of acetabular fractures has been steadily increasing in recent years due to the increase in the number of severe injuries, including multiple and associated injuries [8]. With a relatively low proportion of pelvic fractures among all skeletal fractures, the presence of a pelvic injury, and in particular a fracture of the acetabulum, significantly complicates treatment and worsens the prognosis [5]. The previously used conservative method of treatment, in addition to the impossibility of early mobilization of the patient, often does not completely eliminate the displacement of the fragments, which in 40-60% of cases leads to unfavorable results [6]. The frequency of the development of complications such as coxarthrosis dictates the need for such expensive and time-consuming treatment methods as hip arthroplasty [2]. In this regard, experts are increasingly placing indications for surgical correction of injuries of the acetabulum, this is also facilitated by the introduction and development of such high-tech methods of visualization of injuries as computed tomography, magnetic resonance imaging. [4].

In the Republic, the diagnosis and treatment of patients with injuries of the acetabulum were studied by E.Yu. Valiev, A.B. Tilyakov. As part of the research, the results of treatment of patients with acetabular injuries from 6 months to 8 years were studied. Evaluation of the results of treatment of patients was carried out in two directions: anatomical and functional. The anatomical result was assessed on the basis of control radiographs and computed tomograms. Long-term functional results were assessed on the basis of complaints, clinical data, range of motion in a healthy and damaged joint. Complete elimination of displacements of bone fragments of the acetabulum with restoration of congruence of articular surfaces was considered good anatomical results. Full restoration of the functionality of the pelvic ring and hip joints was

considered good functional results. Incomplete elimination of displacements with good adaptation of bone fragments was considered satisfactory anatomical results. Satisfactory functional results were considered for pain arising from prolonged physical exertion, limitation of extreme movements in the hip joint, presence of pelvic deformity that did not significantly affect the support function, with limitation of movements in the joint to 25-30% with a slight defect in gait. Unsatisfactory results were assessed in the presence of severe pain syndrome, including at rest, with restriction of movements in the hip joint by more than 30%, impaired support function and the occurrence of secondary degenerative-dystrophic diseases - coxarthrosis, aseptic necrosis of the femoral head, etc. [18]

When analyzing the available specialized literature, we were unable to find a single rating scale that could be applied only to assess the results of treatment of injuries of the acetabulum [1]. Apparently, this is due to the fact that many specialists do not focus on the allocation of the acetabulum as a separate segment, but refer to it as a part of the pelvis, although according to the classification of the AO cavity this is segment 62 [4]. This approach cannot be considered rational, since the priority functions of the pelvic ring and the acetabulum (support and movement) differ [16]. From existing grading scales and systems (R. et J. Judet - 1952, Merle D'Aubigne and Postel - 1954, M. Shepherd - 1954, M. Laransky - 1967, RA Goodwin - 1968, WH Harris - 1969, J. Charnley - 1972, B. Sterer - 1981, R. Johnston - 1990, M. Binkley - 1999), most of them involve either an assessment after arthroplasty, or an assessment in comparison before and after reconstructive surgery [15]. Therefore, in our opinion, the greatest interest is not the fact of joint replacement itself, but data on post-traumatic changes in the joints in patients in subsequent years, which lead to total joint replacement. It is this contingent of patients that can most clearly characterize the results of treatment in the long-term period [10].

In understanding the causes of the development of such complications of trauma as coxarthrosis and aseptic necrosis of the femoral head (ANFH), judging by the numerous literature data, the opinions of scientists are contradictory. Some believe that after a flawless reduction (less than 1 mm of residual displacement), long-term results are much better than after a bad one (5 mm or more). If post-traumatic arthrosis occurs, it occurs much later, and it progresses more slowly than after poor reduction. Others note that this is a situation in which the accuracy of joint reposition does not seem to correlate with the outcome, which is determined by the severity of the injury: the degree of destruction of anatomical structures and decompensation blood supply to the joint. But, either way, the incidence of unsatisfactory results remains high. Patients with post-traumatic coxarthrosis make up from 17 to 80%, with ANFH due to dislocation up to 10-26%. At the outpatient stage, post-traumatic changes in the hip joint occur in 60-90% of patients, and a third of them require endoprosthetics [17].

Injuries to the acetabulum range from 7 to 25% in relation to all fractures of the pelvis [6] and in most cases are the result of high-energy trauma and a component of polytrauma [10]. In recent decades, there has been an increase in the number of patients who have sustained acetabular injuries as a result of road traffic accidents [9]. The consequences of severe pelvic injuries significantly reduce the quality of life and are often the cause of disability [14]. Treatment of patients with traumatic injuries of the acetabulum is a complex orthopedic task. Due to the significant traumatic force characteristic of this type of injury, correction of life-threatening conditions requiring urgent intervention (traumatic shock, damage to internal organs, bleeding) is carried out [8]. There is no consensus on the issue of choosing the time of surgical

intervention, the method of reduction, osteosynthesis and operative access [7]. Transosseous and open external osteosynthesis, as well as their combinations [3], are actively used; in a number of cases, hip arthroplasty is possible in the late post-traumatic period [13]. Even an adequately performed osteosynthesis always allows achieving the desired result.

The aim of the work is to improve the results of treatment of patients with complex injuries of the acetabulum by developing and implementing an optimal algorithm for therapeutic and diagnostic measures with a justification for active surgical tactics of treatment.

Material and research methods.

We studied the results of examination and treatment of 159 victims with injuries of the acetabulum, who were treated on the basis of the trauma department of the Bukhara branch of the RSCEMP, for the period 2009-2020, which amounted to 28.1% of all pelvic injuries. The medical documentation (medical records, discharge reports, protocols of operations, radiographs and their descriptions, results of CT studies) were analyzed.

Among the victims, males prevailed 100 (63%), 59 (37%) women. The average age of patients at the time of injury was 41.5 years. According to the type and type of activity, the following distribution of workers was 33 (20.7%), office workers 46 (28.9%), students 7 (4.5%), civil servants 4 (2.3%), military personnel 18 (11.4%), non-working 51 (32.0%). Most of the victims were taken to the stage of providing specialized care in the next few hours after the injury - 97.4% (155 victims). Unilateral injuries were more common - in 157 (98.8%) cases, than bilateral ones - in 2 (1.2%) cases. Fracture of the acetabulum on the right was observed in 72 (45.3%) patients, on the left - in 85 (53.5%) patients. The combined nature of the injury was noted in 150 (94.5%), isolated in 9 (5.5%), and multiple - in 86 (54.0%) patients. Upon admission to a specialized hospital, the condition of 7 (4.4%) patients was assessed as satisfactory, in 51 (32%) - moderate and in 101 (63.5%) severe. Complications of treatment were encountered in 51 (32.1%) cases. The mean follow-up period was 52.9 (\pm 48.3) months (range 1 to 354 months). The duration of hospitalization of the victims was from 11 to 156 days - on average, 53.1 (\pm 41.5) days.

Results of the study: In the structure of the circumstances of injuries, road traffic prevailed - in 120 (75.5%) victims. Among them, acetabular fractures were found in 24 (20.0%) pedestrians, 73 (60.8%) drivers and 23 (19.2%) passengers of vehicles who were in the front seat at the time of injury. Catastrauma and external compression led to injuries to the acetabulum in 33 (20.8%) and 4 (2.5%) cases, respectively. (Table 1).

Table № 1

Distribution of victims with acetabular injuries to depending on the mechanism of injury

Mechanism of injury	Frequency	
		%
Car injury	120	75,5

Catatrauma	33	20,8
Compression by load	4	2,5
Gunshot wound	1	0,6
Work injury	1	0,6
Total	159	100,0

All fractures were divided according to the JudetR classification. and Letournel E. (Table 2). The type of fracture depended on the position of the femoral head in the acetabulum at the time of injury and the direction of the traumatic force. Simple fractures were noted in 67 (42.2%) patients, complex - in 92 (57.9%).

Table 2
Characterization of acetabular fractures according to the Judet and Letournel classification

Simple fractures			Complicated fractures		
	A6c.	%		A6c.	%
Front wall	2	1,2	Front column + transverse fracture of the rear column	6	3,8
Front column	6	3,8	T - shaped	14	8,8
Back wall	39	24,5	Back wall + transverse	28	17,6
Back column	7	4,4	Back wall + back column	9	5,7
Transverse	13	8,2	Both columns	35	22
Total	67	42,1		92	57,9

In most cases (151 or 95.1%), injuries of the posterior supporting complex of the acetabulum were diagnosed. Injuries of a complex type were more common - in 105 (66.0%). Isolated destruction (46 observations or 28.9%) of the posterior wall or posterior column was found only in 39 (24.5%) and 7 (4.4%) patients, respectively.

Injuries to the anterior sections of the acetabulum were detected less frequently - in 85 (53.5%) patients. Fractures of the simple type were registered in 21 (13.2%), complex - in 64 (40.3%) patients.

The destruction of the bones forming the bottom of the acetabulum was observed in more than half of the observations - in 96 (60.4%) people, which indicated a significant energy of traumatic forces. Central dislocation of the femoral head was found in every fifth lesion (31 or 19.5%).

The most common mechanism of injury was a blow to the knee joint ("dashboard injury") directed along the axis of the thigh cranially - in 124 (77.9%) patients. This was the reason that an isolated fracture of the posterior wall of the acetabulum or its combination with the collapse of the columns was noted in almost half of the cases - in 78 (49.1%).

The peculiarities of the mechanism of action and the energy of damaging factors characteristic of injuries to the acetabulum explain the presence in most cases of complex type fractures with displacement of fragments and violation of congruence! articular surfaces (90 observations or 56.6%). Simple fractures were diagnosed in more than one third of the victims (58 cases or 36.5%). They were accompanied by destruction of the hip joint support complex and dislocations of the femoral head. Only in 11 (6.9%) cases (group I), the displacement of the acetabular fragments was not observed while maintaining the stability of the joint.

In terms of providing specialized trauma care to patients with injuries of the acetabulum, we have developed algorithms and protocols for providing therapeutic and diagnostic measures.

In terms of providing care to patients at an early hospital stage, conservative measures were performed using skeletal traction. After stabilization of the condition, control X-ray and MSC studies, further treatment tactics were decided. Surgical treatment was used in 97 (61.0%) patients, mainly patients with complex injuries of the acetabulum. Submersible osteosynthesis with the use of reconstructive plates and screws was performed in 69 (71.1%), in the remaining 28 cases we used the method of extrafocal fixation using an external fixation apparatus developed at the RSCEMP.

When studying the immediate results of treatment and comparing the data, it was noted that in the group of patients where surgical tactics were applied, the results were better. This was facilitated by precise anatomical reduction of bone fragments and stable fixation of lesions. An important fact was the possibility of early rehabilitation for the victims.

Conclusion

Thus, we can note that everywhere, as well as in the Bukhara region, there is a tendency to an increase in the number of patients with injuries of the acetabulum. Difficulties in diagnosis and choice of treatment tactics remain relevant. The indicators of active surgical tactics for treating injuries remain low, which affects the results of treatment. A more in-depth study of this problem is necessary with the introduction of modern methods of visualization of injuries and the development of minimally invasive methods of treatment.

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