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A MODERN APPROACH TO THE DIAGNOSIS AND SURGICAL TREATMENT OF ACETABULAR INJURIES

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Abstract. Issues of diagnosis and treatment of victims with complex pelvic injuries is an urgent problem of modern emergency traumatology. This is due to the high mortality rate, which in high-energy injuries reaches up to 10%. A high percentage of adverse outcomes and complications and a disability rate of up to 40%. The complexity of the problem is due to the anatomical, biomechanical features of the injuries and the predominance of patients with severe combined trauma .

Keywords. Acetabulum, Physiological, traumatologists, surgical treatment.

Despite many scientific studies and a significant number of publications, many issues of providing specialized trauma care to this category of victims continue to remain unresolved and debatable.

According to numerous studies of recent years, various methods of surgical treatment of victims do not allow to effectively deal with the emerging complications and achieve good anatomical and functional outcomes. High rates of adverse outcomes force traumatologists to expand the indications for surgical methods based on minimally invasive technologies (5).

It should be noted that to date, optimal algorithms for therapeutic and diagnostic measures have not been developed and the role of active surgical tactics has not been determined, taking into account the severity and course of traumatic disease in patients with complex fractures of the pelvic bones and, in particular, the acetabulum.

Based on the analysis of the data available to us in the scientific literature, we can conclude with a high degree of

confidence that the problem of diagnosis and treatment of complex variants of acetabular fractures requires further study, the development of modern diagnostic methods and differentiated approaches to the use of various treatment methods. The steady increase in the number of victims of this category has been noted since the middle of the XX century and is due to the development of technological production, the emergence of high-speed transport, as well as other high-energy traumatic factors. According to a number of authors, acetabular fractures most often occur as a result of road accidents - about 89% of the victims, as well as falls from a height - almost 12% [9].

Multiple and combined injuries of the pelvic ring are considered the most severe, and their occurrence reaches 80 % [7]. Concomitant injuries are observed from 60 to 91 % in patients with unstable pelvic injuries [9].

According to the authors, disability reaches 59.0 %, and the mortality rate for injuries of this type ranges from 10 to 75.0 % [13].

A clear algorithm of the modern approach to the treatment of combined pelvic injuries is formed, based on the use of step-by-step treatment tactics and systems "Damage-control surgery" and "Damage-control orthopedics" [15], which contribute to the implementation of an individual approach to the treatment of each specific case of injury. The use of AVF and C-rana has become an integral component in the treatment of blood loss and shock and an effective prevention of the development of disseminated intravascular coagulation syndrome, fat embolism [14].

Butterwick D. et al. (2015), based on their studies, showed that in the age group of patients, the associated variant of BB fractures involving both columns is a common pattern and occurs in 23-26% of cases [15]. The classification of pelvic and IV fractures is usually based on the analysis of the results of X - ray examination of patients with mandatory computed tomography with two-and three-dimensional reconstruction of the damaged IV and the hip joint as a whole, in order to get a better idea of the nature of the fracture and assess the degree of displacement of the fragments [4]. This allows a comprehensive assessment of all injuries, their stability, the state of the bone-cartilage structures of the acetabulum and congruence in the hip joint (TBS) [14].

Analysis of publications shows that indications for surgical treatment are pelvic fractures of type B and C [A. F. Lazarev, E. I. Solod, A. S. Roskidailo, A. A. Lazarev, M. G. Kakabadze, Ya.G. Gudushauri, I. Dan 2009]. In this case, as a rule, immediate fixation of pelvic fractures is necessary, as an emergency primary surgical procedure aimed at stopping bleeding and fighting shock [11]. According to recent publications, the timing of surgical

interventions on the pelvic ring and IV is primarily due to the condition of patients, the severity of anatomical and functional injuries, the duration of the resuscitation period and varies from 1-3 to 34 days [4]. It should be noted that in almost all publications, the authors write about the need for surgical treatment of patients in this group [7] at an earlier time (6-10 days).

However, despite the huge number of scientific papers devoted to the use of CT, there are no clear indications and deadlines for the implementation of this study.

Analysis of the mechanism of fractures showed that the nature of the damage to the acetabulum is largely determined by the relationship in the joint at the time of injury, i.e., the degree of flexion, abduction, reduction or rotation. Flexion and adduction of the hip leads to dislocation, in flexion and median rotary position there is a fracture of the upper rear edge when bent at 90° - a fracture of the rear edge when bent at 115° - fracture of the back-bottom edge of the acetabulum. [10]. Under the action of the force from the femoral neck and the median rotation, a transverse fracture of the acetabulum occurs. With an internal rotation of 25-50°, transverse fractures are combined with a fracture of the iliac-sciatic support, the latter often breaks when diverted to the side of the hip by 10-15°. In order for a fracture of the ilio-pubic support to occur, an external rotation of at least 30° and a hip retraction is required, and the force of the impact must act on the large trochanter. [5].

Fractures of the acetabular margin are usually accompanied by an iliac dislocation of the hip, a frequent complication of such fractures is damage to the sciatic nerve - 2-4% [4]. A fracture of the bottom of the acetabulum in 30% of cases is accompanied by a central dislocation of the hip [9]. In this

case, the impact force is acting in the course of the femoral neck, proximal part of the thigh is in position 10-20° internal rotation, and the main force of impact shifted to the Central part of the depression. In this type of fracture, complications are possible in the form of damage to the pelvic organs, massive internal bleeding into the retroperitoneal space, and the development of shock, which, of course, causes difficulties in the timely diagnosis of acetabular fractures [8]. Although, according to Bauchidze O. Sh. (12), only in 11% of cases a fracture of the acetabulum is a damage that determines the severity of the condition of patients. O. Sh. Buachidze (2), writes that diagnostic errors occur in 12.6% of patients and most often in patients with multiple injuries.

Currently, various authors use the term "vault of explosives", meaning the part of explosives located above the notch in the direction of the total vector of forces applied to explosives. On computer tomograms, the arch is represented as a hemisphere, the border of which is located 10 mm below the top of the BB [7].

To ensure the normal function of the TBS, to distribute the load on the entire available articular surface, to reduce the load on the articular cartilage, the size of the VA arch should be sufficiently extended, since the direction of the forces acting on the VA varies depending on the type of daily human activity [3]. Matta J.M. et al. it is believed that the size of the arch should exceed the limits of the scope of the nafuzka [2].

In order to test the hypothesis of the leading role of the VA vault in determining the outcome of treatment, Matta J. et al. [8] proposed a method for quantifying its damage. It was found that the non-removed displacement of the BB fragments of more

than 3 mm in the range of the rear and middle arches of the BB arch up to 30°, the front arch up to 20°, in all observations lead to unsatisfactory results. Since it was not possible to achieve a satisfactory reposition of fractures of this type by conservative methods, the authors conclude that the range of the BB arch less than 45° in each of the three dimensions is an indication for surgical treatment [15].

Thus, acetabular fractures occupy a significant place in the structure of injuries. In addition, in recent years, there has been an increase in auto injuries and the proportion of acetabular fractures continues to increase steadily. At the same time, this type of injury is characterized by high mortality and disability. Many works have been devoted to the problem of diagnosis and treatment of acetabular fractures, however, the currently existing methods of conservative treatment are insufficiently effective and have many disadvantages. There are also shortcomings in the diagnosis of acetabular fractures and there are no clear indications for the use of modern diagnostic methods.

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