SCIENTIFICALLY PROVED TREATMENT OF THE ACETABULAR FRACTURES AND THEIR CONSEQUENCES

M. Shorustamov
Tashkent Medical Academy, 2, Farobi Str., Tashkent 100109 Uzbekistan
wmt66@mail.ru

Abstract: Quality treatment of the acetabular fracture requires creation specialized center, with orthopedics, which has complete experience in this field and all modern medical equipments for perform operative procedure. By own experience and analysis all dates about 1000 cases of operative treatment of the acetabular, Letournel E., proved that, importance of reconstruction of the anatomical structure of acetabular cavity. Firstly, this kind of operative, reconstruction of the anatomical structure by using bone graft had been successfully performed by group of sciences Exeterre (Gie et al., 1993). For recovering bone loose part O.Sh.Buachidze (2004) used bone graft from lower part of head and neck of femoral bone. Compact cortical part of neck gives to perform compression osteosynthesis.

Keywords: hip a joint, acetabulum, surgical approach, diagnostics, treatment, rehabilitation treatment, preventive maintenance, depth of a wound, an index of depth of a wound, a corner of an inclination of an axis of operational action.

For rendering of the qualitative surgical care, as Perry D. consider (1997), for acetabular fractures it is necessary to built specialized medical center with surgeons skilled in treatment of acetabular fractures and with the modern medical equipment and apparatuses (Kutepov et al, 1995; Kutepov, 1995; Lavrov, 1965; Miliukoff and Pronskih, 2006; Mineev, 1993; Tikhilov et al., 2011).

On the basis of analysis of the character of acetabular fracture, knowledge of anatomic patterns, personal experience due to performance of more than 1000 operations on the acetabulum Letournel E. has developed novel operative approaches (ilioinguinal, extended iliofemoral) demonstrated efficacy of anatomic reconstruction of the hip joint congruity (Lavrov, 1965; Lazarev, 1992; Miliukoff and Pronskih, 2006; Tikhilov et al., 2011; Yezhov, 1996).

It is considered that indications for conservative treatment include (Bashurov, 1984; Beaule, 2003; Kutepov, 1995; Lazarev, 1992; Miliukoff and Pronskih, 2006; Yezhov, 1996):
1) fractures without displacement, partial fractures;
2) value of the anterior acetabular arc angle more than 30º, middle – 40 º, posterior - 50 º (or the anterior acetabular arc angle should be less than 45 º in all measurements);
3) congruity of the femoral head and acetabular arc preserved without the skeletal traction;
4) the most displacement of the osseous fragments after closed reposition of the fracture should be less than 3 mm;
5) old age of patients;
6) complex comminuted fractures with “secondary congruity”;
7) marked osteoporosis;
8) severe accompanied diseases.

Lat time skeletal traction was used as therapeutic immobilization. However, now the skeletal traction is used at providing emergency medical care for the suffering people at the shock state, for attenuation of the pain syndrome, prevention from possible hip joint dislocation, further displacement of the bone fragments, as well as in cases when operation must be delayed (Miliukoff and Pronskih, 2006; Tikhilov et al., 2011; Yezhov, 1996). The application of various constructions of the external fixation was limited due to their disadvantages of biomedical and clinical character. At present the external construction are used as the tool for temporal fixation of the fracture during period of stabilization of the general health state of the patient (Babosha and Adonin, 1999; Beaule, 2003; Chevalier, 1993; Grigoryan, 1994; Lavrov, 1965; Mineev, 1993; Tikhilov et al., 2011). At the same time there are no universal opinion about the role of the apparatuses of
external fixation for fracture treatment (Anagnostakos, 2009; Grigoryan, 1994; Lavrov, 1965; Lazarev, 1992; Mineev, 1993; Tikhilov et al., 2005; Yezhov, 1996). However, for advantages of this technique there are related:

1) possible use for victims at the shock;
2) reposition, fixation and compression of the bone fragments during the first hours after trauma;
3) reduction of the pain syndrome intensity;
4) bleeding stopping;
5) mobilization of the patient;
6) less stage of injury;
7) decrease in frequency of the femoral head aseptic necrosis and hip joint arthrosis.

Because of development of medical science and clinical practice allowing increase in possibilities of roentgenodiagnosis, study of surgical anatomy of the acetabulum, operative approaches and techniques of internal fixation, publication of the reports of Lambotte A. (1913), Levine M. (1943), Urist M. (1948), Elliot R. (1956), Jude R. and Letoumel E. (1964), Nerubay J. (1973), the conservative methods of treatment of the acetabular injuries made way for open reposition and internal fixation (Chevalier, 1993; Ginnoudis et al., 2005; Kumar et al., 2005; Lavrov, 1965; Lazarev, 1992; Miliukoff and Pronskih, 2006; Tikhilov et al., 2005; Yezhov, 1996). The open reposition and internal fixation of the acetabular fracture are considered to be indication in the following cases (Bashurov, 1984; Beaulé, 2003; Grigoryan, 1994; Kutepov et al., 1995; Kutepov, 1995; Miliukoff and Pronshikh, 2006; Mineev, 1993; Tikhilov et al., 2005; Tikhilov et al., 2011; Yezhov, 1996):

1) displacement of the bone fragments more than 2 mm or diastasis between them more than 3 mm;
2) preserved arch of the acetabular roof less than 30°;
3) the size of the anterior acetabular arc angle 30°, middle 40°, posterior 50°;
4) presence of the acetabular fragment in the joint cavity;
5) impression acetabular fracture;
6) comminuted acetabular fracture without signs of the “secondary congruence”.

Mao K. (1987) divided the contraindications for the open reposition and internal fixation into absolute:

a) severe accompanied diseases;
b) polyorgan insufficiency due to trauma;
c) systemic infectious diseases;
d) local infectious focuses;
e) marked osteoporosis; and relative: a) severe comminuted fracture with signs of the "secondary congruence"; b) presence of the hip joint arthrosis in the patient.


The primary endoprosthesis of the hip joint in the early postoperative period is one of the perspective methods of the current orthopedics (Bashurov, 1984; Charles, 2005; Ginnoudis et al., 2005; Kumar et al., 2005; Miliukoff and Pronskikh, 2006; Mineev, 1993; Tikhilov et al., 2005; Yezhov, 1996). For primary endoprosthesis of the hip joint in the patients with the acetabular injuries Mears D. (1999), Tile M. (2003), Jimenez M. (1997), Jolly M. (1993), Mears D. (2002), Mears D. (2000) considered the following absolute indications: the acetabular fractures in the patients suffering from coxarthrosis; the acetabular injury with femoral head fracture, femoral neck and instability of the hip joint; old age and extensive accompanied pathology; impressive fractures >40% of the articular acetabular surface including the surrounding arch; pathological fractures of the acetabulum. As the relative indications they classify fractures: of the group of “high risk” in the elderly patients, particularly T-shaped, of the posterior column and posterior wall, transversal and of posterior wall, with abrasive injuries of the articular surface, posterior fracture-dislocations; multicomminuted intra-articular fractures; extended abrasive injury of the articular surface (Charles, 2005;
Kumar et al., 2005; Kutepov et al., 1995; Miliukoff and Pronskih, 2006; Mineev, 1993, Tikhilov et al., 2011; Yezhov, 1996). However, the problem of surgery, by Tile M. opinion (2003), is the primary fixation of the acetabular component of the endoprosthesis which is frequently difficult because of the acetabular defect (Mineev, 1993). The reconstruction of the acetabular defects with use of bone grafts was performed successfully by the group of scientists in Nijmegen and in Exeterre (Gie, 1993). For replacement of the bone defect O.Sh Buachidze with co-authors (2004) used figured transplant at from the lower segment of the femoral head and neck. The stable cortical layer of the femoral neck allows performance of compression synthesis. For replacement of the osseous defect, by opinion of Burwell R.G., Gray J.C., Haddad F.S. (2009), the bone autografts would be used more effective than allotransplants. The endoprosthesis of the fresh acetabular fracture only allows shortening the hospitalization period, on the average to 10 days and avoidance of possible complications connected with forced position of the patient (Mears, 1998; Beaule, 2002; Cochu et al., 2002; Mouhsine et al., 2002).

The results of total prosthesis of the hip joint in the consequences of the acetabular fractures exceed outcomes of the operation performed due to arthrosis deforming of the hip joint (Pritchet and Bortel, 1991; Bellabarba, 2001). The frequency of the aseptic loosing of the acetabular component of the cement fixation 10 years after endoprosthesis accounts for 38.5%, and in the common forms of arthrosis of the hip joint – 4.8%. Mechanical instability of the endoprosthesis of fixation without cement is also high and achieved 19% for the acetabular component (Huo et al., 1999).

The presence of the acetabular fracture in the anamnesis of patient complicates the procedure of endoprosthesis (Glas and Vallese, 2002) and risk of complication in the postoperative period (Bhende, 2002). The active life style increase also the risk of complications, particularly of aseptic loosing of the endoprosthesis components (Dorr et al., 1994; Herberts and Malchau, 1997; Frank et al., 2010). The endoprosthesis dislocation is the most frequent complication of the total endoprosthesis of the hip joint due to consequences of the acetabular fractures. The complications observed at the absence of the acetabular component in the anatomic position and in infection before the total endoprosthesis (Pavelka et al., 2006; Ranawat et al., 2009).

The thrombosis of the deep veins appeared to be frequent complication after the total endoprosthesis of the hip joint, and the pulmonary emboli seems to be frequent cause of the mortality in these patients on the 7-th day after operative intervention. The medicamentous thrombosis prevention and mechanic compression of the lower extremities is recommended as prevention of such complications (Stannard et al., 2001; Baser et al., 2011).

According to the data of M.Weber (1998) the survival of the acetabular component during 10 years accounts for 78%. Pavelka T. and co-authors showed that the results of total prosthesis of the hip joint in the consequences of the acetabular fractures seem to be comparable in relation to complexity with outcomes of revision but not primary endoprosthesis.

Thus, the analysis of the literature data indicated that the questions of treatment of the acetabular fractures and their consequences are the actual and significant problem of traumatology and orthopedics and require the further improvement.

References


Lavrov, I.N. (1965) *Fractures of the bottom of the acetabulum and central dislocation of the hip. Published Theses (Ph.D.),* Moscow: n.a.


