

an average of 12,4 days. There were used surgical approaches: classical antero-lateral – 52, MIPO – 35, MIPPO – 1, TARPO – 16 and medial parapatelar (for retronail) – 19 cases. Fixators used: condylar buttress plate–24, blade–plate 95o – 11, angular stability plate – 65, locked intramedullary nail (retronail) – 18, DCS – 2, screws (for type B fractures) – 3.

**Results:** Consolidation occurred in 94% of cases in a period of from 4 to 9 months. There were 3 cases of deterioration of fixators, solved with osteoplastic re-osteosynthesis; 3 secondary displacements with further vicious consolidation, 4 pseudoarthrosis and 2 septic complications.

**Conclusions:** Individual approach of the distal femur fractures, respecting the AO principles, the right choice of implant and minimally invasive surgical techniques is a optimal tactics to obtain favorable functional results and avoid complications.

**Keywords:** distal femur, osteosynthesis, consolidation.

## SURGICAL TREATMENT OF TIBIAL PILON FRACTURES



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**Objective:** The research of statistical and curative particularities of surgical treatment of tibial pilon fractures.

**Material and methods:** The scientific work is based on a retrospective and prospective study on a group of total 172 patients with tibial pilon fractures treated during the years 2013-2015 in Traumatological Departments of The Emergency Medicine Institute from Chisinau. The diagnosis was confirmed by clinical, radiological in all cases and MRI in 59 cases. The etiology of trauma in 103 cases were fall from height and in 44 cases - car collision. Open fractures was in 42 cases, GA type I – 21, GA type II – 18 and GA type III – 3 cases. Extra-articular fractures was 48 cases, intra-articular – 124 cases, RA type I – 29, RA type II – 54 and RA type III – 41 cases.

**Results:** The surgical treatment was the most indicated, in 125 cases, extrafocar osteosynthesis (Ilizarov) - 33, plate osteosynthesis – 38, screws/pins osteosynthesis – 24 cases, external fixation was used in 29 cases associated with high damage of soft tissue, which later were converted in stabile osteosynthesis. After surgery a part of the patients were evaluated at an interval of 12 to 24 months using. We obtained good results in 18 patients, satisfactory - 20, unsatisfactory - 4 patients.

**Conclusions:** The tibial pilon fractures prognosis in most cases is unpredictable because of intra-articular character with involve articular surface elevation, difficulty reducing and maintaining fragments and frequency of occurrence of various complications. Surgical treatment requires advanced experience of orthopaedic surgeon, and a very good preoperative planing with establish an appropriate time, surgical approach and method of fixation.

**Keywords:** tibial pilon, itra-articular fracture, surgical treatment.

## EXPERIENCE IN TREATMENT OF PELVIC FRACTURES IN MULTIPLE AND ASSOCIATED INJURIES



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**Materials and and methods:** We present treatment results of 623 polytrauma patients with pelvic fractures. There were 411 (66,53%) males and 212 females (33,47%), mean age 37,59±1,001 years (p<0,05). The main cause of trauma was traffic road accident (64,37%), fall from height (25,32%), high energy impact (10,31%). All the patients were complex examined, pelvic fractures were detected according to M.Tile classification. Stabilizing pelvis osteosynthesis by device for external fixation was performed in 52 cases as an antishock measure. Early pelvis osteosynthesis was done in 172 patients for quick mobilization. Other patients underwent delayed osteosynthesis after 7 days, open reduction and combined osteosynthesis was performed in 12 cases.

**Results:** Pelvic fractures type B and C leveled to type A after osteosynthesis by external device. Patient hemodynamic was stabilized. Volume of transfusions decreased, on average, for one patient at 1,2 ± 0,2 l/day, blood products – at 0,68±0,2 l/day (p<0,05). Enlargement of the radiological shadow, the "blurring" of the iliac muscle contours, development of the intestinal paresis was not observed. All these signs proved the tanpmade effect of eraly pelvis osteosynthesis. Vertical mobilization of the patients with urinary bladder injuries led to normalization of the urine passage and its composition.

External fixation of the polyfocal and rotational unstable pelvic fractures allowed one-step and dosage correction of the pelvic ring and prevented developement of complications. Vertical displacement of the hemipelvis was eliminated by creating of the additional support point up to optimal correction of the bone fragments, and saving the patient mobility.

**Conclusions:** Elaborated surgical treatment of the pelvic injuries, management of the polytrauma patients resulted in

positive outcomes in 97,4%. Adequate surgical correction of the pelvis is possible almost in all the cases. The positive effect of pelvic stabilization by device for external fixation is especially expressed in the resuscitation period. Device for reposition and external fixation allows stable fixation of the bone fragments in different clinical situations, maintains movements in the hip joints and helps restoring the function of pelvic organs, cardiovascular and respiratory systems.

**Keywords:** pelvic fractures, surgical treatment, external device

## SCAPULAR INJURIES



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**Introduction:** Traumatic injuries of the scapula are insufficiently elucidated in the national scientific literature. Balanced movements of the shoulder girdle and upper limb are damaged, thorax function suffers, and lung excursion is limited in these fractures.

**Materials and methods:** We present treatment results of 4 patients with posttraumatic winged scapula and 19 – with scapular fractures. Winged scapula was observed in males 20-26 years old, athletes, who lifted the load. The patients were admitted in 14-18 months after unsuccessful conservative treatment. They underwent surgical fixation of the scapula in 2 points: to the spinous process of Th3 and to the 5th rib by suture tape. We obtained positive results in all cases with recovering of the scapula and upper limb function.

Scapular fractures were determined in 19 polytrauma patients: 17 males and 2 females. There was longitudinal fracture of the scapula body (1), fracture of the neck with displacement (2), multiple injuries of the scapular (16). There was saggy shoulder – the head of the humerus went down with the injured glenoid fossa in patients with scapular neck fracture, Firstly scapular fractures were fixed by orthosis for shoulder joint in severe patients, in the early period of traumatic disease. The fractures were not operated urgently because it was impossible to fix the patient with unstable rib fractures for the posterior approach to the scapula. Indications for the surgical treatment were fractures of the neck and articular surface with displacement. ORIF was performed in 9 patients. Three patients with clavicle fractures underwent osteosynthesis of the clavicle by plate, reduction of the scapula was achieved without its additional fixation. Other patients wore orthosis for immobilization of the shoulder joint because multiple rib fractures didn't permit cast.

**Results:** Long-term results of surgical and conservative treatment were similar. All the patients were physically active, returned to their previous work. Limitation of flexion and abduction in the shoulder joint was minor; the strength of muscles was satisfactory.

**Conclusions:** Scapular injuries may lead to permanent limitation of motion in the shoulder joint. Correct management of these patients allows positive results.

**Keywords:** winged scapula, scapular fracture, surgical treatment

## THORACIC CAGE STABILIZATION IN THE COMPLEX TREATMENT OF POLYTRAUMA PATIENTS



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**Introduction:** Thoracic injuries in polytrauma are dominated and cause up to 50% mortality. The main causes are: severity, quick progression of pathological processes with injured rib cage and hemopneumothorax and leading to lung ventilation disturbance.

**Materials and methods:** We present treatment outcomes of 136 patients with pelvic fractures, multiple and associated injuries and closed thoracic trauma aged 18-72 years. The main causes of trauma were traffic road accidents in 74,37% cases. Multiple rib fractures (n=114), fractures of the sternum (n=23), clavicle (n=19), scapula (n=19) and long bones (n=87) were associated with traumatic brain injury (n=120) and abdominal organ lesion (n=49). All patients were completely examined according to elaborated scheme.

Main group included 61 patient treated by early fracture stabilization of the upper limb, sternum and ribs. Indications for rib cage stabilization were dominated thoracic injuries, with paradoxical breathing associated with fractures of the pelvis and proximal femur. Control group included 75 patients treated by traditional methods for pleural complications: drainage and