

Fractures of the Proximal Femur Clinic, Diagnosis and Treatment (Clinical Recommendations, Abbreviated)

Nematov Dilshod

Bukhara State Medical Institute, Uzbekistan

A B S T R A C T

Fractures of the proximal femur (PPOBC) are one of the most common causes of patients' admission to the hospital of the traumatological and orthopedic profile. For the absolute majority of patients with PPOBK, such an injury means the loss of the previous degree of mobility.

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Keywords: clinical recommendations; femur; diagnosis; treatment of fractures of the proximal femur (PPOBK) is an extra-classification concept that includes fractures of the femoral head, fractures of the femoral neck (SBK), transvertebral, intervertebral and subvertebral femoral fractures (BC).

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Classification of PPOBK according to ICD-10:

S72.0 Femoral neck fracture

Fracture in the hip joint (without further clarification)

S72.1 Transvertebral fracture Fracture intervertebral fracture of the trochanter

S72.2 Subcutaneous fracture

Diagnosis and treatment of patients with PPOBC is a non-classification concept that combines the principles of examination and treatment of patients with fractures of the head of the BC, fractures of the SBC, transvertebral, intervertebral and subvertebral fractures.

PPOBC is divided into low-energy and high-energy damages [1].

Low-energy injuries occur with a minor injury (for example, a fall from a height of one's own height). The reason for such fractures may be a decrease in the amount of bone tissue and a change in its quality, for example, in osteoporosis, metastatic bone lesions and similar processes accompanied by a change in the microarchitectonics of trabeculae, the accumulation of their micro-fractures, an increase in the porosity of the cortical bone [2], mainly in patients older than 60 years.

High-energy PPOBCS occur due to the transfer of a large amount of kinetic energy to tissues, which leads to significant damage to soft tissues and bone; this type of fractures is more common in young patients.

With the increase in the life expectancy of the population, the proportion of elderly people, including those with chronic somatic pathology, increases, respectively, the number of registered PPOBCS increases. Low-energy fractures of CD occur, as a rule, following a fall from height to side and occur mainly in people over the age of 60 years [3]. Annually, about 1 million 700 thousand cases of PPOBC are registered worldwide. By 2050, while maintaining the main demographic trends, it is predicted that the number of PPOBCS will increase to 6 million 300 thousand cases annually [29]. In Russia, according to epidemiological studies of the population over 50 years of age, the frequency of PPD is 174.78 cases per 100 thousand population in men and 275.92 in women, and this indicator is steadily increasing [5].

The risk of a fracture in the trochanteric region during life in men is 6%, and in women it reaches 18% [6]. In Norway in 2015, according to Классификация переломов головки бедренной кости

To systematize fractures of the BC head, according to the literature, the Pipkin classification is most often used [15], according to which 4 types of fractures are distinguished (Fig. 1):

- Type I - fractures of the BC head, distal to the fossa of the BC head;
- Type II — fractures of the BC head, proximal to the BC head fossa;
- Type III — fractures of the BC head, combined with a fracture of the SBK;
- Type IV — fractures of the BC head, combined with a fracture of the acetabulum.

Classification of femoral neck fractures

To systematize fractures of BSC in the literature, the most widely used classifications are Garden [16] and Pauwels [17], which allow, depending on the type of fracture, to determine the tactics of treatment and predict its results.

Classification of Femoral neck fractures Garden

The classification of fractures of the SBK Garden is based on the degree and nature of displacement of fragments (Fig. 2).

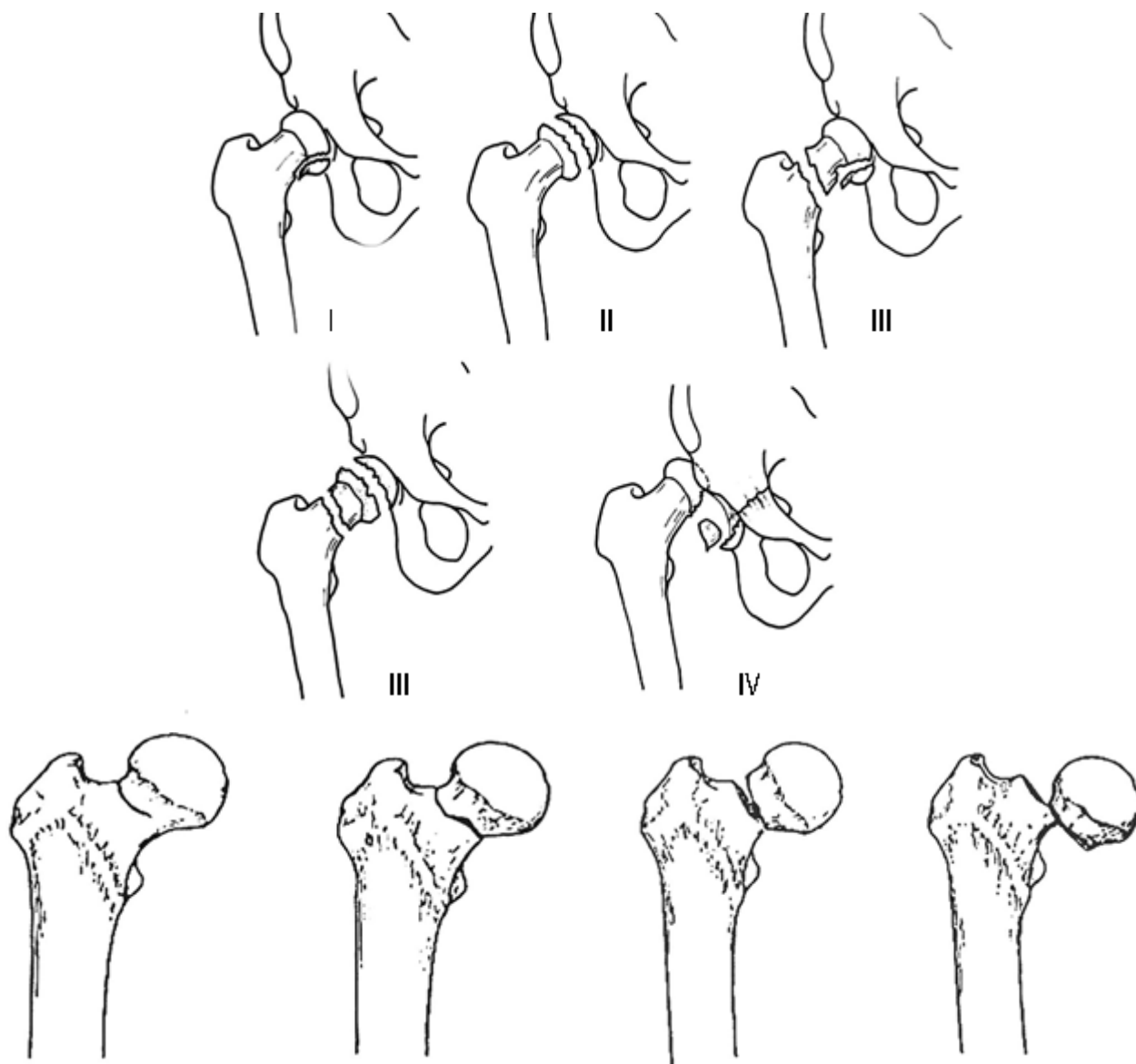
- Type I - incomplete, embedded, hallux valgus fractures;
- Type II — hallux valgus, complete, stable;
- Type III — varus fractures with a small displacement;
- Type IV — varus fractures with significant displacement.

Classification of femoral neck fractures Pauwels

Another popular classification of SBK fractures, the Pauwels classification, is based on the direction or angle of the fracture line relative to the horizontal plane (Fig. 3):

- Type I — the angle of the fracture line with a horizontal up to 30°;
- Type II — angle of the fracture line with a horizontal up to 50°;
- Type III — the angle of the fracture line with a horizontal up to 70°.

Fractures of type I or II, according to the Garden classification (valgus or impaled without displacement), or type I according to the Pauwels classification, are characterized by a high degree of stability and minimal disturbances in the blood supply to the head of the BC, which is favorable from the point of view of the prognosis of fracture consolidation and justifies osteosynthesis as a method of choice when determining the tactics of surgical treatment [19].



Classification of fractures of the trochanter region of the femur

Extracapsular fractures include transvertebral, intervertebral and subvertebral fractures. According to the AO/OTA classification [13], transversal fractures are coded 31A and are divided into 3 types — A1, A2, A3, which, in turn, depending on the severity of the fracture, are divided into 3 subgroups (Fig. 5).

Fractures of type 31A1 are simple (not comminuted) transversal fractures:

31A1.1n — isolated fracture of the large trochanter (n — fracture of the large trochanter);

31A1.1o — isolated fracture of the small trochanter (o — fracture of the small trochanter);

31A1.2 is a two—fragmented transversal fracture. The plane of the fracture in this case can begin anywhere in the large spit, and end either above or below the small spit. In these fractures, there are always only two bone fragments, and the medial cortical surface has only one fracture line. The small trochanter, or the so-called medial support, is always intact. The most important feature of this type of fractures is that they are all initially

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