

Fractures of the diaphysis of the femur

Fractures of the diaphysis of the femur occur as a result of indirect (skiing) or direct violence (run over by a car wheel, car accident). Fractures in the upper third of the femur (up to 3 cm below the lesser trochanter) are referred to as subtrochanteric and are classified as fractures of the proximal femur.

AO classification (32)

- A – simple (1 – spiral, 2 – oblique, 3 – transverse)
- B – wedge-shaped (1 – spiral wedge, 2 – bending wedge, 3 – broken wedge)
- C – complex (1 – spiral, 2 – stored, 3 – coarsely fragmented)

Diagnostics

Clinical

thigh pain, disfigurement, pathological mobility, limited mobility, hematoma.

Imaging methods

X-ray in two projections (incl. hip and knee joint – storey fractures); typical is the shortening of fragment dislocations (pulling of the proximal fragment into abduction, the distal fragment medially and upwards).

Complications

1. Complications of the injury:
 - injury to blood vessels and soft tissues (muscles) by sharp fragments - bleeding up to 2 liters ,
 - compartment syndrome .
2. Treatment complications:
 - fat embolism, ARDS – during nail pre-drilling,
 - hip joint – incorrect insertion of the nail, axial deviation left,
 - limitation of knee movement – insufficient rehabilitation.



Fracture of the diaphysis of the femur in a child

Therapy

First Aid

- immobilization: vacuum splint, Cramer splints, binding of both DK, formerly Dietrichs splint;
- anti-shock measures (infusions);
- X-ray before removing the first fixation.

Surgical treatment

- Osteosynthesis : must be stable to allow early mobilization (extension beyond the tuberositas tibiae is only a temporary preoperative measure),
 - intramedullary nail : anterograde and closed insertion after alignment of the axis and correct length; nails tend to be secured distally and proximally, preferably undrilled;
 - plate osteosynthesis: it is abandoned;
 - external fixation : open fractures (Tscherne II, III), comminuted fractures, polytraumas;
 - PFN (proximal femoral nail), gamma nail : in subtrochanteric fractures;
 - Prévot rods (TEN – titanium elastic nails): in children.

Conservative treatment

- In children, it is possible to use a patch extension (suspension of DK vertically upwards) and after the formation of the muscle (in 4 weeks) immobilization with a plaster bandage follows.

Links

Related articles

- Fractures
- Bone fractures

Source

- PASTOR, Jan. *Langenbeck's medical web page* [online]. ©2006. [cit. 2011-02-02]. <<http://langenbeck.webs.com/chirurgie.htm>>.

References

- KOUDELA, Karel, et al. *Ortopedická traumatologie*. 1. edition. Karolinum, 2002. ISBN 80-246-0392-6.