

## 16. THE SURGICAL TREATMENT OF THE POLYTRAUMA PATIENT

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**Introduction.** Polytraumatism is a syndrome caused by multiple lesions of defined severity ( $ISS \geq 17$  points), accompanied by sequential systemic reactions which may cause dysfunction and insufficiency of organs and systems of vital organs, which were not itself involved in the lesions. Around 16000 people in the world die every day as a result of trauma (5,8 million people per year) and the forecast for 2020 is no better, the surveys show that this year there are expected around 8,4 million deaths. Management in polytrauma patients has been considerably changed in recent years, due to the rapid development of multi-fracturing techniques. Despite the implementation of good methods of diagnosis and treatment, there is no reduction in complications and invalidations from trauma, which is explained by the severity of these injuries. Without measures to combat and improve treatment methods, they will lead to an increase in socio-economic harm over the next 10 years. More than 70% of all patients with major trauma need at least one orthopedic surgical procedure, and injuries of the extremities are associated with higher blood transfusion rates, prolonged hospitalization time and many other complications. Several studies have shown the advantages of early fixation of long bone fractures, in particular of femoral diaphysis in polytraumatized patients, namely: Facilitation of medical care, earlier mobilization with improvement of lung function, prevention of complications such as fat embolia, pneumonia, pulmonary thromboemboli, sepsis, etc., and finally by decreasing morbidity and mortality. Primary intramedullary osteosynthesis of the femur (especially in type A and B fractures) may only be recommended for polytraumatized patients without significant chest damage with a score ( $ISS < 25$ ) and if ISS exceeds 40 points, primary stabilization is still essential, but should only be done with external fixers (Cape H-C, Jones A, et al, 2005). ETC involves definitive surgical stabilization of all long-bone fractures during the early phase of treatment (24–48 h). The concept of the ETC holds the merit to focus the attention of the international medical community on the need to stabilize long-bone lesions; this constituted the first step in the development of the modern management of multiple traumas. ETC should be preferred when the clinical condition of the patient and the presence of well-trained surgical teams permit it.

**Case presentation.** The X patient, 54, suffered a trauma, falling from a height of 5 meters. It is transported to the hospital immediately. Being immobilized, it charges pain, functional impotence at the lumbar spine, pelvic and lower leg pelvic on the right. Clinically-radiology investigated and consulted by the multidisciplinary team, diagnosis is established: Polytrauma . Catatraumatism. The sub-trohanter-closed fracture of the femur as Seinsheimer Type IV. AO - 31A3. Fracture of cross-springs of vertebrae L4-5 on the right with movement of bone fragments. Fracture of the sacral mass on the right, with displacement of the bone fragments and injury to the cortical of the shutter holes. The dehiscence of the pubic symphysis and the sacroiliac joint on the left. Two-way pulmonary bruise. Multiple scars of the body and extremities. ISS – 22 points. Following laboratory investigations, no deviations were revealed. This ensures that the patient is admitted at a steady state and within the first 48 hours under general anesthesia protection, the following interventions have been performed for 5 hours: Open reduction. Fixation of the pubic symphysis lesion with the plate; spino-pelvic fixation on the right; indirect reduction. The osteosynthesis of the femur right proximal with the central stem medulla. The postoperative period – no features, no complications, the plagues have scar. Over 7 post-operator days, no active support and movement - with the help of the underarms. At 2,5 months active support on the right lower member and at 4 months, more regular activity is allowed. At one year the patient is presented to the control, where good postoperative functional results with large movements at the affected joints were highlighted.

**Discussion.** A very good functional result was achieved. Post-operative complications have not been registered. The patient has returned to full volume to his day-to-day activity.

**Conclusion.** The polytraumatized patient is a complex patient, requires a multidisciplinary and individualized approach, and early and complete surgical treatment increases the chance for good results, decreases the complications rate, increases the possibility for a full recovery and prevents patient invalidity.