CASE REPORT / OPIS PRZYPADKU

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EARLY COMPLETE SURGICAL TREATMENT OF A PATIENT AFTER MULTIPLE TRAUMA USING INTRAMEDULLARY NAIL AND LCP SYSTEM FROM MEDGAL COMPANY

WCZESNE KOMPLEKSOWE LECZENIE PACJENTA PO URAZIE WIELOMIEJSCOWYM Z UŻYCIEM GWOŹDZIA ŚRÓDSZPIKOWEGO I SYSTEMU LCP FIRMY MEDGAL

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Summary

The study presents a case of a 44-year old patient admitted to the Department of Orthopaedics as an emergency to treat a multiple fractures of lower limbs. Successful, several-stages surgical treatment and rehabilitation was performed providing very satisfactory result. A case shows how important is the individual approach to the patient after multiple trauma.

Streszczenie

W pracy przedstawiono przypadek 44-letniego pacjenta przyjętego do Kliniki Ortopedii w trybie nagłym w celu leczenia operacyjnego wielu złamań kończyn dolnych. Przeprowadzono udane kilku -stopniowe leczenie operacyjne i rehabilitację uzyskując bardzo zadowalający wynik . Przypadek pokazuje, jak ważne jest indywidualne podejście do pacjenta po urazie wielomiejscowym.

Key words: multiple trauma, multiple injury, straight intramedullary nail, fracture, locking compression plate (LCP)
Słowa kluczowe: uraz wielomiejsowy, uraz wielorządowy, prosty gwoźdź śródszpikowy, złamanie, blokowana płyta kompresyjna

MULTIPLE TRAUMA

This trauma is found if injuries occur in at least two topographically different parts of the body (e.g. fracture of the humerus and the femur).

MULTIPLE SYSTEM INJURY ("POLYTRAUMA")

- Includes several systems or organs (e.g. the spine fracture with paresis and chest and abdominal injuries).

- Causes damage to at least two areas of the body to such an extent that each of them requires specialist treatment and can be life-threatening.

- Is defined as the trauma of severity of more than 18 points on an ISS (Injury Severity Score) scale with associated cardiovascular disorders (shock), coagulopathy, the respiratory and multiple organ failure.

- Injuries caused by high-energy trauma are the third leading cause of death in the general population and the first in the age group between 18 and 44 years of age!
- Multi-organ injuries are related to long-term and expensive treatment and also with considerable financial expenditure for rehabilitation, pensions, sickness benefits and compensation.

ORDER OF PROCEEDING IN CASE OF MULTIPLE INJURY

- Directly life-threatening injuries.
- Indirectly life-threatening injuries.
- Directly limb-threatening trauma.
- Indirectly limb-threatening trauma.

Injuries require reconstructive surgery.

1. Accident  
2. First Aid

4. Hospital (emergency department)  
3. transport (paramedic/doctor)

5. Operating room, intensive care unit (specialist treatment)

Fig. 1. Diagram for the time-factors in "golden-hour"

44-years old patient, the sufferer of a car crash, was forwarded to the Emergency Department by an ambulance team with life-threatening multiple injuries. After stabilization of general patient's condition and after preliminary diagnostics (CT polytrauma and abdominal USG) he was admitted to the Department of Orthopaedics.

An additional studies showed: segmental fractures of the right femur (subtrochanteric fracture of proximal femur and multifragmentary complete articular fracture of distal femur), Schatzker type II fracture of the right tibial lateral plateau with pericapsular lateral meniscus tear, fracture of the left foot, ribs fractures on the right side, fracture of the posterolateral wall of the right maxillary sinus and laceration wound of the right hand with index finger extensor tendon injury.

After stabilization of general patient's condition and after clinical consultations (neurosurgical, surgical, ophthalmological, otolaryngological and anaesthetic) in the first stage a surgical repair of injured tendon of extensor of the right index finger was performed. In the next stage open reduction of the distal femur fracture with internal fixation with three HCS compressing screws and also closed reduction segmented complex fracture of the femoral shaft with antegrade nailing were performed. In the final stage, open reduction of the Schatzker II tibial plateau fracture and internal fixation using a lag screw and anatomical locking compression plate from Medgal company were undertaken with repair of lateral meniscus.

Fig. 2. A-D. X-rays taken at the day of an accident show multifragmentary and multilevel fractures of the femur, fracture of the proximal tibia and fractures of the toes I-III and metatarsals and tuberosity of the 5th metatarsal

Fig. 3. A-C. Post-operative X-rays show proper stabilization of fractures without signs of destabilization of the implants
During hospitalization general and local patient’s condition was gradually improved. After implementation of the rehabilitation treatment, the patient was transferred to the Orthopaedic Department of the Polish Navy Hospital in Gdańsk, where he lives.

Patient is under orthopaedic care in Gdańsk. One year after the surgery the x-rays of the lower limbs was taken from a standing position.

Bone union was achieved without distortions of the limb axis and its dysfunction and with the full range of motion in the hip and the knee.

![A-B. X-rays of the lower limbs and right knee one year after surgery show bone union with proper limb alignment without signs of destabilization of the implants](image)

**CONCLUSIONS**

Early fixation of long bone fractures in multiple trauma become the gold standard in most trauma centers in the world as well as in Poland, an example of which is our Department. These patients should be treated with extreme caution and full time care with monitoring vital signs.

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