



CASE REPORT

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Polytrauma Followed by Hip and Vertebral Fracture in Elderly Patients after Traffic Accident

ABSTRACT

Elderly patients with multiple trauma are extremely fragile, hence early fracture stabilization provides an early mobility. The literature shows that early stabilization increases survival and reduces complications. We present a case report of a 79-year-old woman who was in a car accident and sustained unstable lumbar fracture L2 and subtrochanteric hip fracture.

Key words: L2 fracture and subtrochanteric

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Introduction

Polytrauma denotes the condition of a patient who has one or more traumatic injuries due to traumatic organ/system injuries with different current or potential impairment of vital functions. This type of injury is increasing in geriatric population in line with the increase in life expectancy. It is estimated that in 2030, approximately 20% of the population will be aged 65 and older¹. Upon the occurrence of polytrauma in geriatric patients, it is necessary to consider the following: general condition of the patient, comorbidities and reduced functional reserve. In accordance with the literature, our approach was based on the concept of "damage control"². After the hemodynamic stabilization, our aim was to stabilize the fracture within 48 hours. Initially, we stabilized the subtrochanteric fracture and then the L2 vertebral fracture.

Case presentation

A retired 79-year woman was admitted to the emergency room in AORN G. Rummo of Benevento with diagnosis of multiple trauma as a result of car accident. The triage tag code was red. Conducted radiography of the patient showed a subtrochanteric unstable fracture type III, according to the AO classification. (Fig.1.)

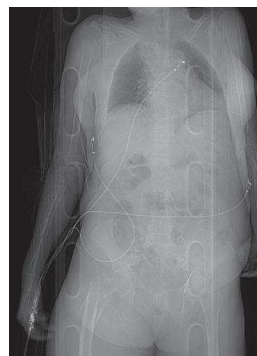


Fig.1. subtrochanteric unstable fracture type III, according to the AO classification

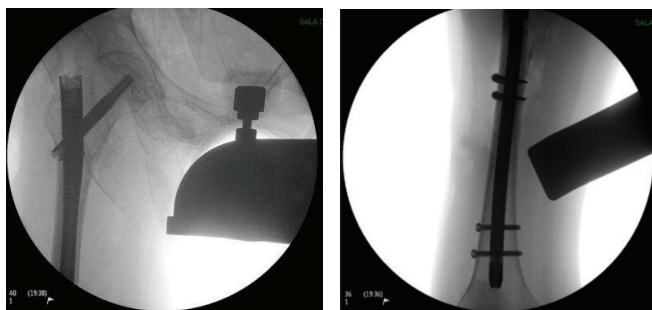
The patient also had a vertebral fracture L2 according to the Margerl AO classification (Fig. 2.)

Fig.2. L2 fracture



A CT scan did not verify spleen, liver and other organs injuries. The Glasgow Coma Scale Score was 15. The patient reported a history of being treated for arterial hypertension and diabetes mellitus type 2. After the reanimation and the approval of the anaesthesiologist to perform a surgery in one act, the reposition of the subtrochanteric fracture with the usage of intramedullary nail (Gamma Nail 3) was conducted. The stabilization of the aforementioned fracture was conducted as well, and in order to achieve it, two nails were placed in proximal third. (Fig. 3.)

Fig.3. Stabilized subtrochanteric fracture



Subsequently, the L2 fracture was stabilized with a short percutaneous implant. (Fig.4.)

Fig. 4. RTG of the stabilized fracture



The patient was given preoperative antibiotic prophylaxis, Cefazolin 2 g intravenously, and 1 g intravenously every 8 hours after the surgery for a total of 6 doses. Anti-thromboembolic prophylaxis was conducted with Enoxaparin Sodium 4000 UI for 35 days. In the second post-operative day, the patient started the rehabilitation program with lymphatic drainage, and continued it in ambulance with the usage of underarm crutches with progressive load up to total load. Hospitalization lasted for 7 days. The patient was monitored by the internist as well. Clinical and radiographic control was conducted 15 days, 1 month, 2 months, 3 months, 6 months and 12 months after the surgery. 18 months after the trauma, the patient is still alive and independent.

Discussion

In the case of this polytraumatized patient, we followed the concept of treatment of a geriatric patient. It is important to set up a treatment that does not involve the depletion of functional reserves of the patient and which could ensure a reduced period of recovery. The fact was that the patient reported the history of being treated for diabetes and high blood pressure, and the femoral and L2 fractures occurred under the influence of high-energy trauma. Unfortunately, when it comes to these cases, outcomes are not reassuring: 1-6% of patients admitted for hip fracture die during hospitalization and about 10% die within 30 days of admission.³

Approximately 30% of elderly polytraumatized patients of the aforementioned kind die within a year and many of them become bedridden and consequently suffer from ailments caused by immobility.⁴ In their study, Lifeso and associates note that, out of 14000 patients with traumatic spinal cord injuries, 4200 of them die before their admi-

ssion to hospital, while about 1500 of them die during the initial hospitalization.⁵

Significantly better outcomes related to hip fractures are reported by Lee DJ, Elfar JC⁶ in their study which describes the treatment of fractures within 48 hours after the admission to hospital. The aforementioned particularly reflects in perioperative complications such as cardiac arrhythmias, coagulopathy, severe anaemia, regulation of blood sugar level and electrolyte, and infections.^{1,6} The choice of treatment is made upon the establishment of hemodynamic stability of patients. Stabilization of long bones in the early phase of treatment, which reduces pulmonary complications and improves lung ventilation, establishes and maintains hemodynamic balance.⁷

The concept of “damage control” was introduced in 2005 by Stahel and associates.⁸ It implies the procedure that allows the treatment of fractures within 24h after the injury.⁸

A decision-making regarding non-operative versus operative treatment of patients with thoraco-lumbar Magerl's Type A fractures with absence of neurologic deficit is controversial. Medici, Meccariello and Falzarano⁹ prefer percutaneous posterior stabilization and claim that surgical percutaneous stabilization has many advantages over the conservative treatment, that is, plaster corset.⁹ This reflects in backpain relief, improved quality of life, reduced blood loss - approximately 3 gauzes. Furthermore, the exposure of surgeons to ionizing radiation is less than 1 millisievert for each stabilization and the patient is released home in three days.⁹

Conclusion

This case report indicates that, in the treatment of geriatric patients with multiple trauma, surgical treatment within 48 hours after the fracture facilitates functional recovery, quality of life and survival of these patients.

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Saobraćajna politrauma starijeg bolesnika praćena prelomom kičmenog pršljena i kuka

SAŽETAK

Stariji bolesnici s multiplom traumom su iznimno osjetljivi i rana stabilizacija preloma omogućuje ranu mobilnost. Literatura ukazuje na to da rana stabilizacija povećava preživljavanje i smanjuje komplikacije. Predstavljamo slučaj žene stare 79 godina koja je u saobraćajnoj traumi zadobila nestabilan prelom lumbalnog vertebralnog pršljena L2 i suptrahanterični prelom kuka.

Cljučne riječi: prelom L2 i suptrahanterični prelom kuka