Georgian Scientists
ქართველი მეცნიერები
Vol. 8 Issue 4(1), 2026
https://doi.org/10.52340/gs.2026.08.04(1).116



ISOLATED INJURY OR SYSTEMIC TRAUMA? DAMAGE CONTROL RESUSCITATION IN THE DECOMPENSATED ELDERLY PATIENT

Zurab Chochia[1], Kakhaber Bukiya[2]

[1]Faculty of Medicine, Tbilisi State Medical University, Tbilisi, Georgia

[2]Department of Orthopedics and Traumatology, First University Clinic, Tbilisi State Medical University, Tbilisi, Georgia

Background: Damage Control Orthopedics (DCO) is traditionally established as a management strategy for severe polytrauma. However, in elderly and polymorbid patients, even an isolated major skeletal trauma can trigger severe systemic decompensation. This study aims to demonstrate the critical role of DCO combined with aggressive metabolic resuscitation in geriatric emergency medicine.

Case Presentation: An 84-year-old male was admitted to the First University Clinic of TSMU presenting with a comminuted subtrochanteric fracture of the right femur and post-traumatic encephalopathy/delirium. Although diagnostic workup (FAST ultrasound, chest radiography) ruled out concomitant internal organ injuries, confirming an isolated musculoskeletal trauma, the patient's baseline physiological status was highly critical. Laboratory and instrumental evaluations revealed severe metabolic lactic acidosis (lactate: 5.82 mmol/L, base excess: -9.2 mmol/L), acute azotemia (creatinine: 150.8 μmol/L), marked leukocytosis (18.91 × 10^9/L), cardiac systolic dysfunction (ejection fraction: 40%), and new-onset atrial fibrillation.

Management and Outcomes: Given the prohibitive physiological risks associated with definitive primary osteosynthesis, a DCO strategy utilizing minimally invasive plate and screw fixation was promptly implemented. Following intensive care unit admission and targeted metabolic and fluid resuscitation, a complete and rapid normalization of the patient's metabolic profile was achieved (lactate decreasing to 0.80 mmol/L). Postoperative anemia (hemoglobin: 7.9 g/dL) was successfully managed via goal-directed red blood cell transfusion, raising hemoglobin to 10.4 g/dL. Subsequently, the patient achieved stable systemic hemodynamics and significant neurological recovery.

Conclusions: This case highlights that in geriatric populations, overall trauma severity is dictated not solely by anatomical injury patterns, but by severely constrained physiological reserves. The

synergistic application of the DCO protocol and prompt metabolic resuscitation serves as a vital, life-saving intervention in managing isolated yet systemically devastating trauma.

Keywords: Damage Control Orthopedics, Geriatric Trauma, Subtrochanteric Fracture, Metabolic Resuscitation, Physiological Decompensation.