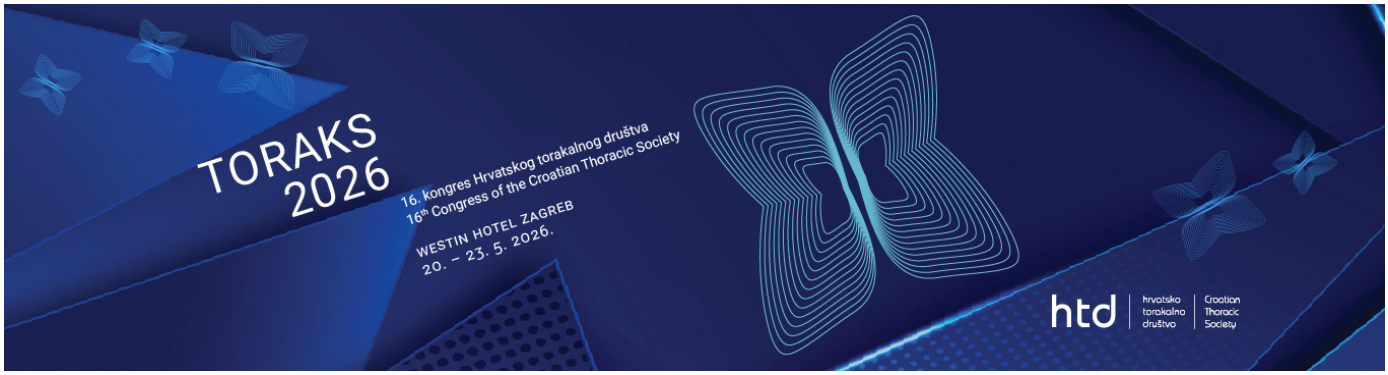


MANAGEMENT OF SEVERE THORACIC TRAUMA WITH RIB FIXATION: A CASE REPORT

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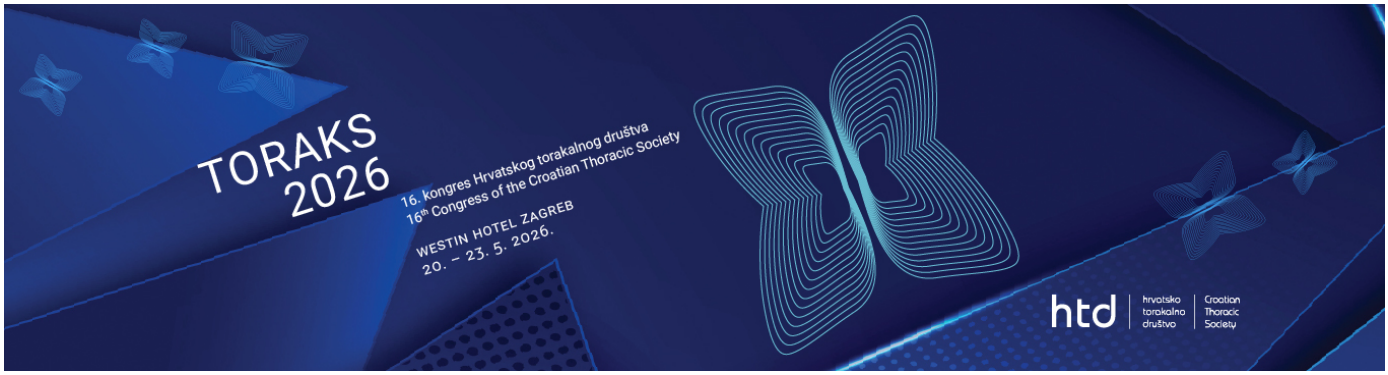
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Objective:

INTRODUCTION

Flail chest is a severe thoracic injury, particularly dangerous in elderly patients due to impaired ventilation and severe pain, which can cause infections. The Strasbourg Costale Osteosynthese System (STRACOS) is a titanium plating system that enables effective fixation of complex rib fractures while preserving chest wall flexibility and reducing the risk of hardware-related complications. This case demonstrates its successful implementation and supports the role of surgical stabilization in the management of this type of trauma.

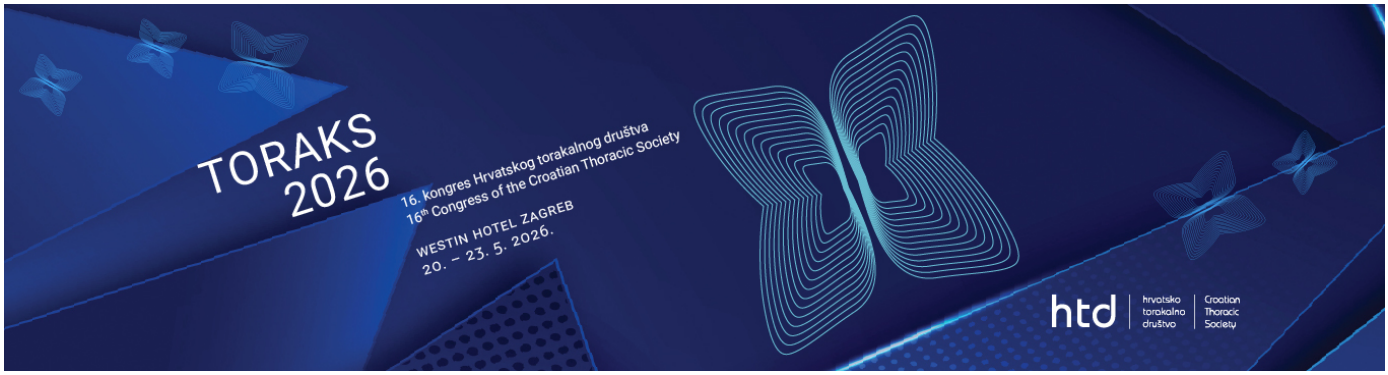
CASE REPORT



An 80-year-old female patient was admitted to the hospital following a traumatic fall inside a bus caused by sudden braking. She had suffered an impact on the head and posterior thorax. She was tachydyspnoic and hypoxemic, while physical examination revealed paradoxical thoracic movement with inspiratory retractions, tenderness on palpation, and crepitus. Her prior medical history only had arterial hypertension.

A contrast-enhanced MSCT scan performed for polytrauma assessment demonstrated laceration of intercostal vessels, a left-sided hemopneumothorax, and an extensive ipsilateral subcutaneous emphysema extending from the base of the neck to the iliac crest, with air also present within the thoracic wall musculature. Multiple rib fractures were identified on the left side: ribs 3, 4, 5, and 12 without significant displacement, and ribs 6 through 11 with displacement equivalent to the width of the rib, involving paravertebral, mid-axillary, and anterior axillary lines. Initial management included placement of a left-sided chest tube and administration of analgesia with an escalation of oxygen therapy from face mask to reservoir mask. The patient was indicated for surgical management consisting of video-assisted thoracoscopic surgery (VATS) combined with rib osteosynthesis using the STRACOS fixation system four days later. The procedure was successful, and she was extubated on postoperative day two.

Postoperative recovery was complicated by age-related factors and prolonged immobilization. Imaging demonstrated regression of subcutaneous emphysema and pneumothorax, with a residual pleural effusion (up to 38 mm) and partial lung collapse. The patient also developed acute colonic pseudo-obstruction with an inflammatory response, managed conservatively with rectal tube decompression. The next follow-up showed regression of pleural effusion with clinical and laboratory improvement, and the patient continued to recover successfully.



CONCLUSION

This case reports about a still relatively uncommon procedure, highlighting the importance of surgical stabilization in severe thoracic trauma, especially in older people. The STRACOS system enabled effective rib fixation, reduced pain, accelerated mobilization, and helped prevent respiratory complications such as pneumonia, demonstrating its value in managing severe thoracic trauma.