

CASE REPORT

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Successful laparoscopic management of combined traumatic diaphragmatic rupture and abdominal wall hernia: a case report

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Abstract

Background: Traumatic diaphragmatic rupture and traumatic abdominal wall hernia are two well-described but rare clinical entities associated with blunt thoracoabdominal injuries. To the best of our knowledge, the combination of these two clinical entities as a result of a motor vehicle accident has not been previously reported.

Case presentation: A 32-year-old Indian man was brought to our emergency department after being involved in a road traffic accident. He described a temporary loss of consciousness and had multiple tender bruises at his right upper anterior abdominal wall and left lumbar region. An initial examination revealed blood pressure of 99/63 mmHg, heart rate of 107 beats/minute, and oxygen saturation of 93 % on room air. His clinical parameters stabilized after initial resuscitation. A computed tomographic scan revealed a rupture of the left diaphragm as well as extensive disruptions of the left upper anterior abdominal wall. We performed exploratory laparoscopic surgery with the intention of primary repair. The diaphragmatic and abdominal wall defect was primarily closed, followed by reinforcement with PROLENE onlay mesh. The patient's postoperative recovery was complicated by infected hematomas over both flanks that were managed with ultrasound-guided percutaneous drainage. He was discharged well despite a prolonged hospital stay.

Conclusions: We present a complex form of injuries managed successfully via a laparoscopic approach. Meticulous attention to potential complications in both the acute and convalescent phases is important for achieving a successful outcome following surgery.

Keywords: Motor vehicle collision, Traumatic diaphragmatic rupture, Traumatic abdominal wall hernia, Blunt trauma, Mesh repair

Background

Traumatic diaphragmatic rupture (TDR) and traumatic abdominal wall hernia (TAWH) are rare, albeit well-documented, clinical entities associated with blunt thoracic and abdominal injuries. The mechanism of injury for TDR and TAWH is similar and related to either blunt or penetrating trauma. TDRs have been reported either as an isolated injury or in association with other abdominal injuries. However, to the best of our knowledge, the combination of TDR and TAWH as a result of a motor vehicle accident has not been reported to date. We present such a case and describe the surgical

approach we used and the complications encountered during the recovery phase. The term *rupture* is synonymous with tear and is defined as a break or disruption of tissue. *Defect* is defined as an abnormal opening in the anatomical structure. Sarawak General Hospital, with which the authors are affiliated, is the main tertiary and referral hospital in the state of Sarawak, Malaysia. The hospital manages around 10,000 cases of trauma annually.

Case presentation

A 32-year-old Indian man was brought to our emergency department after being involved in a road traffic accident. His current medical history included obesity, with a body mass index of 38 kg/m², and treated hypertension. He was in the front seat of a passenger car that was involved in a head-on collision with another car. He

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