

Case Series: Perioperative management of traumatic diaphragmatic hernia in a tertiary care centre

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Diaphragmatic injuries have always posed diagnostic and therapeutic challenges to trauma care physicians. The presentations vary from gross hemodynamic instability and cardiac arrest to GIT obstruction and respiratory insufficiency from weeks to years later. Patients were found to be asymptomatic in upto 53% of the hernias resulting from blunt trauma to 44% from penetrating trauma. Lack of a single reliable radiological diagnostic modality and concomitant multisystem injuries often complicate diagnosis by shifting attention away from the diaphragm. Motor vehicle accidents cause blunt diaphragmatic injury with penetrating injuries resulting from gunshot or stab wounds. Traumatic rupture of the diaphragm together with concomitant abdominal injuries dictates the need for emergency surgical intervention after initial resuscitation. Patients who present late require surgical repair as gut viability may be compromised. Chest radiology, CT Scan, Focused Assessment by Sonography in Trauma (FAST) and MRI scan are the main diagnostic pillars. Initial management is as per ATLS protocols. This is followed by an emergency thoracotomy with one lung ventilation (OLV) as part of the anaesthetic technique. Invasive hemodynamic monitoring along with monitoring of respiratory parameters in the peri-operative period is the dictum. Post-operative management in an Intensive Care Unit with haemodynamic, biochemical, haematological, neurological and ventilatory management are an integral part of treatment. Thereafter, rehabilitation of polytrauma victims by chest physiotherapy and other modalities needs to be carried out for optimal patient outcome. The surgical approaches could be either diagnostic or therapeutic, open or minimally invasive, by a thoracotomy or laparotomy, as per protocols being followed by individual trauma units and surgeon preferences. Post-operatively such cases frequently require ICU care with/without ventilatory support and/or hemodynamic interventions, maintaining scrupulous asepsis, good nursing care, adequate sedation, appropriate resuscitative measures, etc. such measures auger well for patient recovery. Ventilator associated pneumoniae

(VAP), sepsis and DIC, especially in cases of polytrauma, are causes of great concern. A few cases are being presented to illustrate the various management strategies involved. Case 1: A 39 year old male presented with blunt chest trauma with multiple rib fractures and acute onset respiratory distress. Patient was resuscitated, found to have left sided traumatic rupture of diaphragm with herniation of viscera into the thoracic cavity. Patient underwent emergency thoracotomy with repair of diaphragmatic tear, reposition of herniated viscera and ICD insertion followed by ventilatory support in the ICU. Case 2: A 22 year old male presented with history of stab injury to left upper abdomen and breathlessness and features suggestive of hemorrhagic shock. Patient underwent emergency laparotomy with splenectomy and repair of stomach tear, suturing of diaphragmatic rent and ICD insertion. He was shifted to the ICU for observation and further management. Case 3: A 30 year old female presented with history of road traffic accident, sudden onset breathlessness, bilateral chest trauma with features of hemorrhagic shock. Patient was trapped in an automobile and extricated from the mangled wreck. Patient was resuscitated, underwent thoracotomy with repair of diaphragmatic tears, splenectomy and bilateral ICD insertion followed by ventilatory support in the ICU. Case 4: A 60 year old male with a gunshot injury to the abdomen was brought to the emergency, being referred from a private hospital. Patient was disoriented at the time of presentation. After appropriate resuscitation patient underwent exploratory laparotomy with splenectomy and repair of a transverse colon perforation (splenic flexure). A small diaphragmatic rent found on exploration was also repaired. Case 5: A 48 year old mason working at a construction project had fallen from a height of about 20 feet onto iron rods resulting in penetrating trauma to the chest and abdomen. Patient underwent exploratory laparotomy with splenectomy, partial gastrectomy with repair of multiple diaphragmatic perforations with bilateral ICD insertion. Patient was transferred to ICU for elective ventilator support.