Authors: Vitor F. Kruger, Alcir E. Dorigatti, Gustavo P. Fraga, Elcio S. Hirano, Bruno M. Pereira

TRAUMATIC DIAPHRAGMATIC HERNIA: a 28-year experience at a university hospital

Background: Traumatic diaphragmatic hernia (TDH) is uncommon and difficult to diagnose in trauma patients.

Aim: The aim of this study is present demographics, how to improve the diagnosis, surgical treatment and outcomes.

Methods: This is a retrospective trauma registry based study in a single university trauma center between 1990-2017

Results: A total of 3.003 trauma patients were submitted to exploratory laparotomy. 425 (14.1%) had a diaphragm injury. TDH was identified in 55 cases (12.9%), with predominance of male (46 cases - 83.6%), and age ranging from 13 to 59 years old (median 34). Blunt TDH occurred in 40 cases (72.7%; automobile accident in 26 cases) and penetrating TDH in 15 cases (27.3%; stab wound in 9 cases). Diagnosis was made mostly by chest x-ray (CXR) in the trauma bay (31 cases - 56.3%), following the intraoperative finding (13 cases - 23%). Laparotomy was performed in 54 cases (98.1%) and only one patient with stab wound was treated by laparoscopy. In two patients with chronic TDH was necessary associated thoracotomy. In 13 patients (23.6%) with hemodinamically instability the diagnosis was intraoperatively, 2 cases with diagnostic peritoneal lavage. The surgical indication was based in CRX in the trauma bay in 30 cases (54,4%). computed tomography in 7 cases (12.7%), laparoscopy in 3 cases (5,4%), in 3 cases 2 converted to laparotomy. 49 cases with left side, 5 right side and 01 bilateral. The stomach was the organ most frequently found herniating into the chest (38 cases). The rate of pulmonary complications was 18 cases (66%).The LOS average was 14 days. The mean ISS was 24. Overall mortality was 20% (11 of 55).

Discussion: TDH was identified in few trauma patients (1.8%) admitted at our hospital, mainly after blunt trauma. Despite advances in imaging methods, CXR is still useful in the diagnosis or suspicion of TDH and the ATLS® protocol should be followed. CT is helpful for the diagnosis of TDH and identifies associated injuries. Laparoscopy was useful diagnosis in three patients but only one was treated laparoscopilly. Laparotomy remains the gold standard for the diagnosis and treatment.