

***Faculty of Medicine***

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***Title: Diaphragmatic injuries in children after blunt abdominal trauma***

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***Abstract:***

Traumatic rupture of the diaphragm resulting from blunt abdominal trauma remains a challenging clinical entity. Description of such type of injuries in children is scarce in the literature.

The aim of this study was to present this special form of injury in the pediatric age group and compare the different aspects of diaphragmatic injury with that occurring in adults.

Ten cases of diaphragmatic rupture after blunt trauma in children were reported the presentation, findings, and management were described

This study included 7 boys and 3 girls aged 3 to 16 years. Trauma in 8 cases resulted from motor vehicle or auto-pedestrian accidents and 2 from falling from a height. Chest radiograph shows suggestive signs of diaphragmatic injuries in 7 occasions including intrathoracic visceral herniation in 4 cases and hemothorax in 3 cases. Associated injuries were found in 5 cases in the form of rib fractures in 3 cases and lung contusion in 2 cases. Lung tear, gut perforation, and liver tear were each reported once. Isolated diaphragmatic injury is reported in 5 cases. Three cases were repaired via thoracotomy or laparothoracotomy and 7 cases via midline laparotomy. On exploration, we found diaphragmatic avulsion of the costal origin in 5 cases, 3 left and 2 right contrary to tears, of which 4 were left sided and 1 right sided. Primary repair was conducted in 7 cases and an intercostals muscle flap was used in 3 cases. No mortalities were reported

This series of diaphragmatic rupture in children reveals the following : (1) Avulsion of the costal origin of the diaphragm is a peculiar type of injury described in children (5 of 10) . (2) The intercostals muscle flap is a useful tool to bridge diaphragmatic defects. (3) Isolated diaphragmatic injuries do occur in children more frequently than in adults. (4) As in adults, diaphragmatic rupture prevails in the left side, and purposeful surgical diagnosis and early management determine the effectiveness of treatment.