

Blunt traumatic aortic injury in a traumatized child

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Section: Chest imaging

Imaging Technique: CT

Imaging Technique: Digital radiography

Case Type: Clinical Cases

Authors: M. Wintermark, P. Schnyder

Patient: 16 years, female

Clinical History:

Crush accident in a child

Imaging Findings:

16-year-old female child run over and crushed by a small truck

Discussion:

Blunt aortic injuries are encountered in less than 0.5% of blunt chest trauma. They occur in high-speed traffic accidents and are thus associated with severe cranial, intrathoracic and intra-abdominal lesions. They usually lie at the aortic isthmus. Plain film patterns, notably mediastinal widening, may be difficult to interpret, due to thymic presence. As in adults, spiral computed tomography and trans-esophageal echography most often replace time-consuming and invasive aortography.

Differential Diagnosis List: Blunt aortic lesion at the level of the isthmus in a crushed child

Final Diagnosis: Blunt aortic lesion at the level of the isthmus in a crushed child

References:

Lowe LH, Bulas DI, Eichelberger MD, et al (1998)

Traumatic aortic injuries in children: radiologic evaluation.

AJR 170: 39-42. (PMID: [9423595](#))

Pearson GD, Karr SS, Trachiotis GD, et al (1997)

A retrospective review of the role of transesophageal echocardiography in aortic and cardiac trauma in a level I Pediatric Trauma Center.

J Am Soc Echocardiogr 10: 946-955. (PMID: [9440072](#))

Spouge AR, Burrows PE, Armstrong D, et al (1991)

Traumatic aortic rupture in the pediatric population. Role of plain film, CT and angiography in the diagnosis.

Pediatr Radiol 21: 324-328. (PMID: [1891255](#))

Striffeler H, Leupi F, Kaiser G, et al (1993)

Traumatic rupture of the thoracic aorta in childhood with special reference to the therapeutic strategy.

Eur J Pediatr Surg 3: 50-53. (PMID: [8466878](#))

Wintermark M, Gudinchet F, Schnyder P (2000) Pediatric chest trauma. In Schnyder P, Wintermark M. Radiology of blunt trauma of the chest. Springer, Berlin Heidelberg New York, pp 135-146.

Figure 1

a



Description: Admission chest X-ray demonstrates a mediastinal widening and bilateral subpulmonary pneumothoraces (From Wintermark M, Gudinchet F, Schnyder P (2000) Pediatric chest trauma. In Schnyder P, Wintermark M. Radiology of blunt trauma of the chest. Springer, Berlin Heidelberg New York, pp 135-146) **Origin:**



Description: Spiral CT section (3-mm) on T4 level displays an extensive hemomediastinum. This hemomediastinal realtes to an aortic rupture, featuring intimal flaps (black arrows) within the aortic lumen, which are delineating an aortic pseudo-aneurysm (white arrows) (From Wintermark M, Gudinchet F, Schnyder P (2000) Pediatric chest trauma. In Schnyder P, Wintermark M. Radiology of blunt trauma of the chest. Springer, Berlin Heidelberg New York, pp 135-146) **Origin:**

c



Description: Thoracic aortography confirms the aortic lesion at the level of the isthmus (arrow) (From Wintermark M, Gudinchet F, Schnyder P (2000) Pediatric chest trauma. In Schnyder P, Wintermark M. Radiology of blunt trauma of the chest. Springer, Berlin Heidelberg New York, pp 135-146)**Origin:**