

ABSTRACT

Background: Blunt abdominal aorta injury (BAAI) is an infrequent condition. 0.03% of blunt trauma patients are presented with BAAI and the overwhelming majority involve the infrarenal portion.

Methods and results: We described the case of an aortal intimal flap (uncomplicated DeBakey Type IIIb/Stanford Type B aortic dissection) in blunt trauma.

A 59-year old male suffered blunt trauma caused by an industrial machine. He had multiple fractures of facial bones and thoracolumbar spine. Computed tomography revealed an intimal flap of the posterior left wall of the abdominal aorta, located between coeliac trunk, superior mesenteric artery and renal arteries. The patient was treated with β -blockers in order to maintain his blood pressure below 120 mmHg. The course of treatment was uneventful.

Conclusions: The case represented could increase the level of knowledge in blunt trauma abdominal aorta injuries, indicating that non-surgical treatment with cross sectional image monitoring is a safe procedure for treatment of uncomplicated juxtarenal aortic dissection.

BACKGROUND

Blunt abdominal aorta injury (BAAI) is a rare presentation. 0.03% of blunt trauma patients are presented with BAAI. Thoracic aorta injuries are more common (20 times) than abdominal injuries. (1) The overwhelming majority involve the infrarenal portion. (2)

PURPOSE

We described a case of an aortal intimal flap (uncomplicated DeBakey Type III/Stanford Type B aortic dissection) zone 2 in blunt trauma. (1,2) The main purpose is to present this rare injury, its rare mechanism of injury and the issues of its treatment.

METHODS

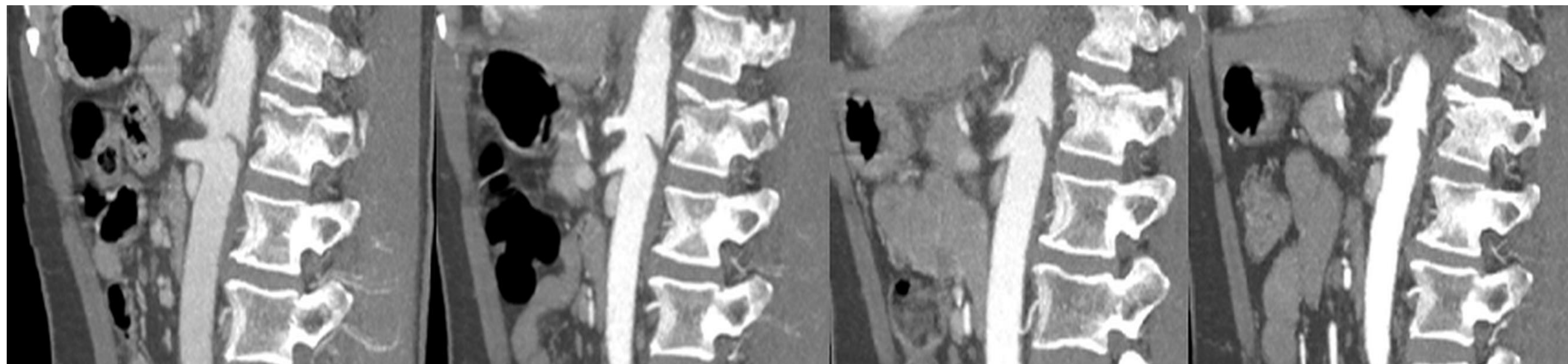
- A 59-year old patient was admitted to intensive care unit after he was caught with in a circular mill being pulled by his sleeve and rolled over the spindle for several times. At admission, vital signs were stable.

- His medical history was unremarkable, with no history of systemic hypertension.

RESULTS

- Initial radiological assessment verified spine fractures of L1 vertebral body and transversal processes of L1, L2 and L3, left sided rib fractures from 6th to 9th and from 9th to 12th on the right side, along with facial bones fractures. Computed tomography angiography (CTA) of the thoracic and abdominal region revealed intimal dissection (15,7mm x 17,0mm) of the abdominal aorta accompanied by disruption of atherosclerotic plaques without end-organ malperfusion.
- According to the classification scheme for treating blunt aortic injury (1), a large intimal flap (LIF) is defined as an intimal defect and/or thrombus of ≥ 10 mm in length or width with the absence of aortic external contour abnormality.
- The LIF was positioned on the posterior left wall of the abdominal aorta, between SMA, coeliac trunk and renal arteries.

Figure 1: A contrast enhanced computed tomography (CT) scan in the follow up period (1st, 6th, 25th day of hospitalisation and 9 weeks after the accident).



RESULTS

- Conservative approach with close monitoring was recommended. The patient was treated with β -blockers. (3)
- During hospitalization CT scans were performed on 2nd, 6th, 25th day. On 25th day regression to 14.0mm and 13.0mm was unveiled and during follow up, 9 weeks after the injury, the LIF measured 10.1mm. The width of the flap and the calibre of aorta weren't changing during the treatment period.
- 3 years after the injury the aorta was found to be healed completely
- Throughout the follow-up period the treatment course was uneventful.



Figure 3: Computed tomography angiography axial projection. Intimal flap of abdominal aorta.

RESULTS

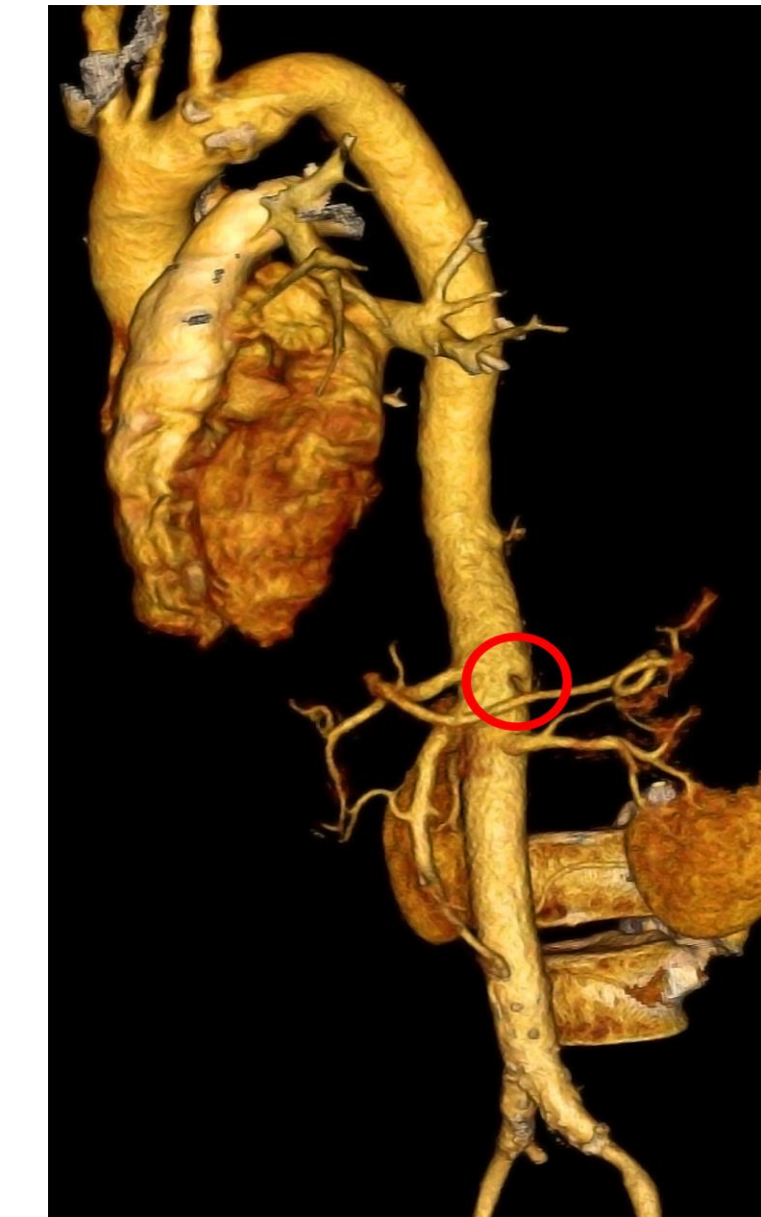


Figure 2: 3D projection of descending aorta. Intimal flap of abdominal aorta in zone II (including SMA and renal arteries).

CONCLUSION

- Patients experiencing blunt abdominal trauma, especially associated with spine fractures need to be examined with the intravenous contrast enhanced CT scan.
- Blood pressure < 120 mmHg maintenance with β -blockers is efficient in uncomplicated patients.
- Contrast enhanced CT scan follow up is mandatory.

DISCLOSURES

The Authors declare that there is no conflict of interest.

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