

Role of Imaging in Aortic Aneurysm with Rupture

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1. Introduction

- An aortic diameter of 3 cm or more is used to define an abdominal aortic aneurysm. Most abdominal aortic aneurysms are true aneurysms.
- Aneurysms most commonly involve the aortic segment below the renal arteries.
- A retroperitoneal hematoma adjacent to an abdominal aortic aneurysm is the most common imaging finding of rupture.
- Extension of hemorrhage into the retroperitoneum, including the perirenal and pararenal spaces, psoas muscles, and peritoneum, is a common occurrence. Intra-peritoneal extravasation may be an immediate or a delayed finding.

2. Aims and Objectives

To evaluate the role of imaging in diagnosing aortic aneurysmal rupture in a patient presenting with acute abdomen & to ensure early diagnosis & treatment.

3. Materials & Methods

Patients who are having history of Concurrent coronary artery disease and peripheral vascular disease, family history of abdominal aortic aneurysm & who came to department of Radio-diagnosis with chief complaints of:

- Severe abdominal pain,
- Pulsatile abdominal mass,
- Nausea & vomitings,
- Shock.

Equipment:

- PHILIPS ultrasound machine using curvilinear probe.
- Toshiba Alexion 16 slice CT machine.

4. Clinical Features at Presentation

Presentation of Various Cases of Aortic Aneurysm Rupture

Presentation of Ruptured Abdominal Aneurysm	Number of Cases	Percentage
Acute Abdominal Pain	13	52%
Pulsatile Abdominal Mass	4	16%
Hypotension	4	16%
Nausea & Vomitings	3	12%
Shock	1	4%
Total	25	100%

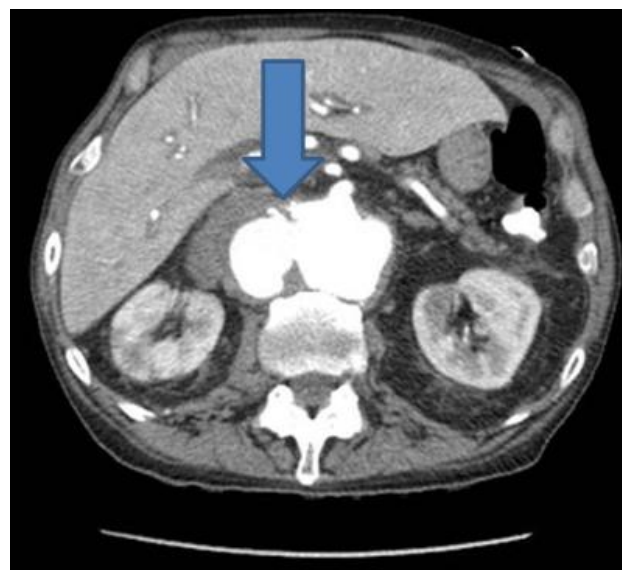
5. Observation and Results

Incidence of Rupture of Aortic Aneurysm with Respective to Size

Aorta Diameter (Size In CM)	Percentage of Chances of Rupture
5 CM- 6 CM	3-15%
6 CM -7 CM	10-20%
7CM-8CM	20-40%
> 8CM	30-50%



Axial CT angiogram reveal large retroperitoneal hematoma with contrast extravasation from with postero-lateral aorta.



Axial CT angiogram shows lobulated appearance of descending aorta aneurysm thrombosis – Mycotic aneurysm.

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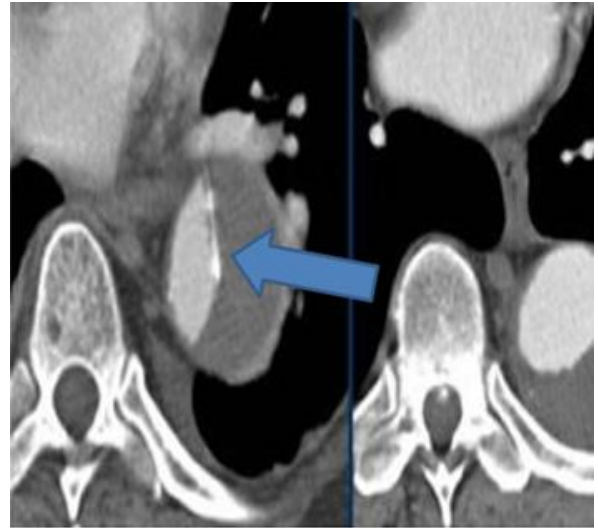
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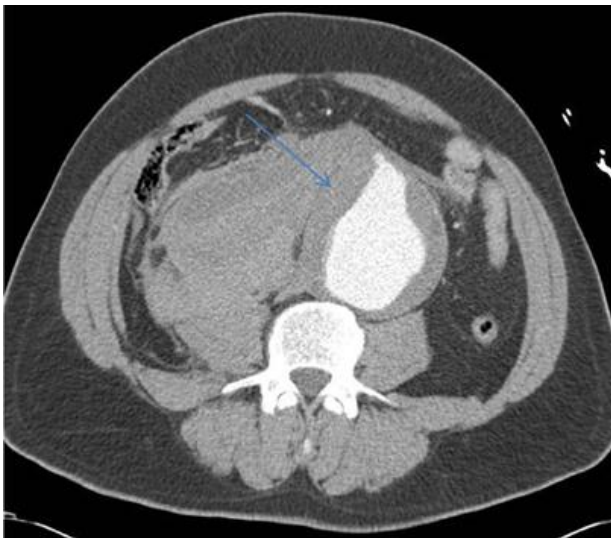
Aortic Aneurysmal Rupture



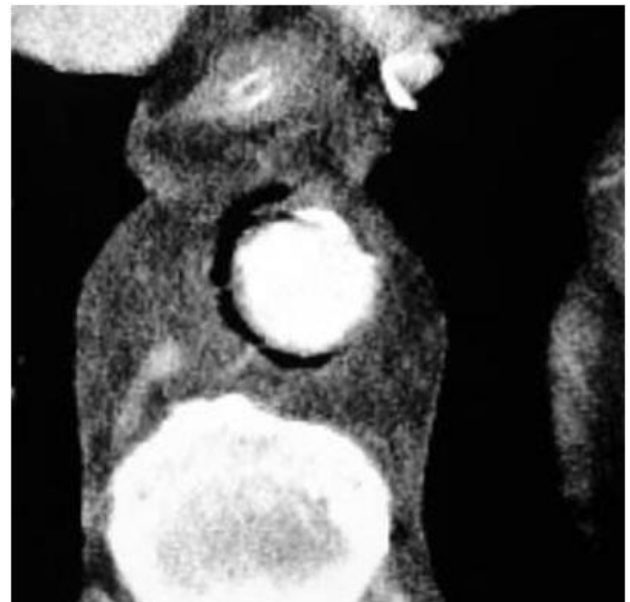
CT angiogram reveals aortic aneurysm with extravasation of contrast into adjacent para aortic region.



Contrast CT shows aneurysm with thrombosis on inner side eccentrically with intimal wall calcifications.

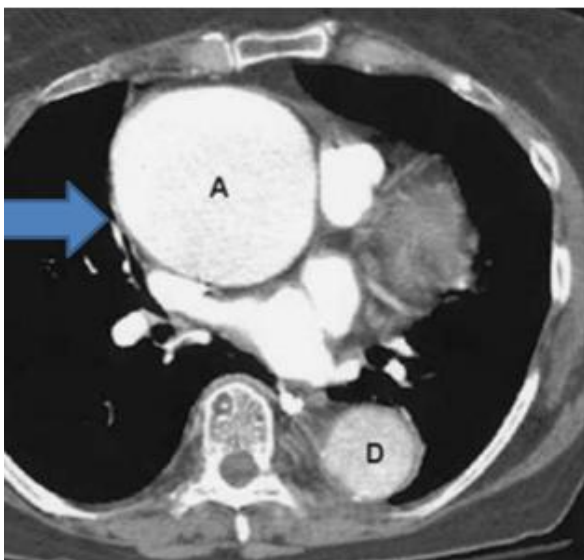


CECT shows aortic aneurysm with saccular aneurysmal dilatation and mild extravasation of contrast.



Chest CT with IV contrast enhancement revealed focal dilatation of the thoracic aorta at the level of T5 to T7 with hazy aortic wall and the presence of intramural air and para-aortic fluid collection. There was no vertebral erosion. The diagnosis was mycotic aneurysm of the thoracic aorta.

6. Cases



Contrast CT scan demonstrating ax 5.3 cm ascending thoracic aortic aneurysm.



CT with IV contrast shows aneurysmal dilatation with extravasation of contrast. Adjacent retroperitoneal hematoma also noted in right para aortic region.

7. Conclusion

- 1) Imaging is the modality of choice to diagnose aortic aneurysms for early management & prognosis evaluation. Prompt detection of abdominal aortic aneurysm rupture is critical because survival is improved by emergent surgery.
- 2) Contrast CT imaging findings that may help to identify impending rupture prior to complete rupture, which has important consequences on treatment and prognosis.

References

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