

Definition

>1.5x diameter of adjacent intact aorta (usually the intrarenal or suprarenal aorta). Alternatively ≥ 3.0 cm may also be considered aneurysmal. Normal is 2.1cm (M) & 1.8cm (F) ≥ 55 y. *Shapes:* fusiform, saccular or rarely hourglass (2 adjacent dilated areas).

Background

- 2% pop
- More common older men
- 80% asymptomatic before diagnosis
- >95% are infrarenal
- Most related to atherosclerosis, but HT, connective tissue disorders (Marfan's syndrome, Ehlers-Danlos syndrome), inflammatory & mycotic aneurysms also factors.

Assessment

History: May be asymptomatic (80%) or have had abdominal pain/back pain. If ruptures: sudden severe constant pain (may mimic GI conditions, back pain or renal colic) \pm vomiting & syncope.

Exam: 50-75% palpable aneurysm/pulsatile mass. May have HT. If ruptures: hypoBP \pm shock, abdominal distension or tenderness - often no rigidity. May look surprisingly well.

Investigations

Bloods: FBC, UEC, coags, XM x 8u

EKG

Imaging: If clearly ruptured do not delay OT, otherwise: USS can be done in ED or if stable and unlikely rupture CT/MRA or arteriography. AXR may show calcified AAA, but not useful. CXR, USS findings: 67% post wall, retroperitoneal echogenic fluid collection, abrupt interruption in thrombus, break in aortic wall, beak sign.

Management if ruptured

Supportive: ABC, O₂, 2 x large bore IVC, analgesia, fluid resus - aim BP_{sys} 90mmHg

Surgical: OT ASAP for endovascular aneurysms repair (EVAR) or open repair/graft.

Management if non-ruptured

- Analgesia
- Surgery considered if AAA >5cm or expanding >1cm/yr.

Complications

- Rupture into IVC (\rightarrow CCF), upper or lower GIT (\rightarrow exsanguination).
- Chronic contained rupture in 5-10%.
- Dissection is relatively rare, accounting for only 2-4% of aortic dissections.
- Emboli may be released, producing livedo reticularis of feet, or blue toe syndrome.
- Thrombosis of a small AAA produce acute claudication.
- Compression of other structures e.g. stomach (satiety, N&V), IVC (\rightarrow DVT)

Prognosis

- >60% of ruptured AAA die pre-hospital. 20% die before OT.
- Emergency repair has mortality of 60-80% (vs 5% in elective repair) worse if age >80, refractory shock, Hct < 0.25, or pre-op cardiac arrest.
- If AAA 4-6cm rupture risk 20% & ave. survival ~3yrs.
- If AAA >6cm rupture risk 40% & ave. survival ~1.5yrs.