Aortic Aneurysm

This pathway is about new or existing aortic aneurysms

Disclaimer

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Background

About aortic aneurysms

➢ Most aortic aneurysms are detected as an incidental finding, either by examination, or from a scan.
➢ Most have no symptoms.
➢ The normal diameter of the abdominal aorta is 20 mm. An aneurysm is defined as a diameter > 30 mm.
➢ The risk of rupture is influenced by several factors, but size is the most important predictor. Rate of expansion and gender are also important.
➢ The risk increases markedly once the diameter is > 55 mm.
➢ Those with aortic aneurysms are at increased risk of cardiovascular morbidity and mortality.
Red flags

- Present or suspected aortic dissection
- Present or suspected dissection or rupture of abdominal or thoracic aortic aneurysm
- Present or suspected symptomatic abdominal or thoracic aortic aneurysm (abdominal or back pain, limb ischaemia)

Assessment

1. Ask about symptoms of increasing aneurysm size or risk of rupture.

Risk of rupture

- Pain in the:
  - chest or epigastrium – thoracic aneurysm.
  - abdomen – abdominal aneurysm.
  - groin – common iliac or femoral artery aneurysm
- Pulsatile mass in abdomen

2. Assess for symptoms of ruptured aortic aneurysm.

Ruptured aortic aneurysm

Classic clinical triad:

- Pain – typically severe and predominantly located in the back, but groin, flank, or abdominal pain or sciatica is possible.
- Hypotension or circulatory collapse.
- Pulsatile mass – may be difficult to appreciate in the obese in the presence of guarding.

3. Take a history of aneurysm risk factors and calculate absolute cardiovascular disease risk.

Risk factors

- Aged > 65 years
- Male
- Hypertension
- Smoker
- First-degree relative with abdominal aortic aneurysm

Risk assessment tools give a "one-off" estimate of risk before starting treatment. Once treatment is started, the accuracy is reduced.

4. Arrange investigations:

   - Ultrasound:
     - Transthoracic echocardiogram for ascending aorta and descending thoracic aorta
     - Abdominal ultrasound for abdominal aorta
   - CT scan – required to confirm and surveil thoracic aneurysms
   - Blood tests

Blood tests

- Fasting lipids
- Fasting glucose
- FBE
- Renal function
Management

1. If symptoms of **ruptured aortic aneurysm**, phone **000** to arrange transfer to the Emergency Department for **immediate vascular surgery referral or admission**. Gain IV access and start resuscitation if fluids are available.

### Symptoms of AAA rupture

**Classic clinical triad:**

- **Pain** – typically severe and predominantly located in the back, but groin, flank, or abdominal pain is possible. May mimic renal colic or sciatica (with radiation to the legs).
- **Hypotension**
- **Pulsatile mass** – may be difficult to appreciate in the obese in the presence of guarding.

2. If a symptomatic aneurysm, or any aneurysm > 9 cm is detected, immediately phone Vascular Registrar to arrange **urgent vascular surgery assessment**.

3. Commence aggressive risk factor modification:
   - **Smoking cessation** – smoking increases the rate of aneurysm growth by 20 to 25%.\(^1\)
   - **Rigorous blood pressure control** – no particular anti-hypertensive agent is favoured.
   - **Reduce lipids** – statins are advised in all patients.
   - **Anti-platelet agents** – provided there are no contraindications, start on low-dose aspirin e.g., aspirin 100 mg.
   - **Diabetes** – aggressive control of blood glucose.

4. Arrange surveillance using appropriate recall systems. Scan intervals are based on aneurysm diameter:

<table>
<thead>
<tr>
<th>Aneurysm diameter</th>
<th>Scan frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 to 34 mm</td>
<td>2 years</td>
</tr>
<tr>
<td>35 to 39 mm</td>
<td>1 year</td>
</tr>
<tr>
<td>40 to 49 mm</td>
<td>6 months</td>
</tr>
<tr>
<td>≥ 50 mm</td>
<td>Vascular review</td>
</tr>
</tbody>
</table>

5. Arrange **routine vascular surgery referral** for surgical opinion regarding repair if:
   - abdominal aortic aneurysm > 4.0 cm diameter.
   - descending thoracic aortic aneurysm > 5.0 cm diameter.
   - rapid abdominal aortic aneurysm expansion > 1.0 cm diameter growth per year.

6. If aneurysm > 5.0 cm in diameter, patient is not fit to drive – see **Assessing Fitness to Drive** (page 51). Only a surgeon can return a patient to driving post-operatively.

7. Regularly monitor all risk factors.
Referral

- If signs or symptoms of dissection or rupture, phone 000 to arrange transfer to the Emergency Department for immediate vascular surgery referral or admission.
- If a symptomatic aneurysm, or any aneurysm > 9 cm is detected, immediately phone Vascular Registrar to arrange urgent vascular surgery assessment.
- If suitable for surgical repair, arrange routine vascular surgery referral.

Information

For health professionals

Further information

Australian Family Physician – Aortic Aneurysms: Screening, Surveillance and Referral

For patients

- Australian and New Zealand Society for Vascular Surgery – Aortic Aneurysm
- Better Health Channel – Aneurysm

Sources

References


Select bibliography


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