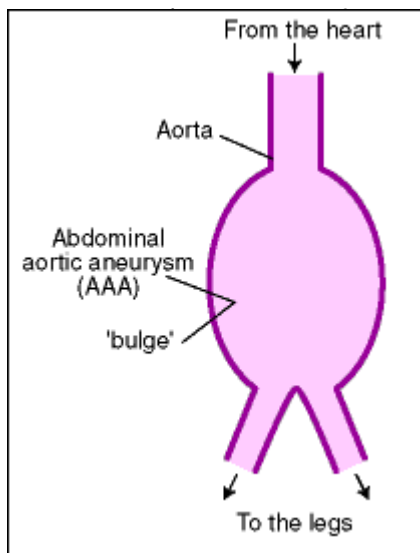


Abdominal Aortic Aneurysm (AAA)

What is the aorta?

The aorta is the major artery that carries blood from the heart to the rest of the body. The aorta branches off into smaller blood vessels, which supply different parts of the body.

In the abdomen (tummy), the abdominal aorta has branches that supply the liver, spleen, gut and kidneys, and then the single abdominal aorta divides into two arteries that supply blood



ers).

What is an aneurysm?

The part of the abdominal aorta that is near the division into two branches supplying the legs can become stretched (dilated) as a result of disease; this extended (and weakened) part is called an aneurysm. It looks like a bulge in the tube. (See the diagram right)

Why do aneurysms occur?

Aneurysms occur most often in men aged 65 years and over. They are more common in people who smoke and have high blood pressure (called hypertension). Some abdominal aortic aneurysms 'run' in families, particularly between brothers.

What is an aneurysm rupture?

Aneurysms tend to get worse and they become more and more dilated (like a worn-out bicycle tyre or inner tube). As this happens, the wall of the aorta becomes stretched and thinner. The risk is that the wall of the abdominal aorta can tear or burst, which leads to internal bleeding from the abdominal aorta into the abdomen. This is called an aneurysm rupture (or ruptured aneurysm). Even if the aneurysm doesn't rupture, sometimes a bloodclot can form inside the abdominal aorta at the site of the aneurysm. This can interfere with the blood supply to the legs.

How do I know if I have an aneurysm?

Most aortic aneurysms cause no symptoms and are discovered by chance. Your general practitioner (GP) might find one during an examination of your abdomen, or one might show up on a scan. Some patients are aware of a prominent pulsation in the abdomen. Rarely, the abdominal aortic aneurysm might cause some back pain and/or abdominal pain.

Preventing rupture

The best treatment for abdominal aortic aneurysms is to prevent them from rupturing. The risk of rupture is related to the size of the aneurysm ('how worn out the tube is'), which can be measured easily using ultrasound scans. Small aneurysms, of less than 5.5 cm in diameter, can simply be 'watched', by doing a scan every 6 to 12 months or so to make sure they do not get any larger. It might be necessary to repair the aneurysm surgically, if the aneurysm has grown larger than 5.5 cm in diameter or if there is any pain from it.

Surgery to prevent ruptures

To repair an aneurysm and prevent rupture, the diseased area of the abdominal aorta is carefully removed and replaced by an artificial graft (eg 'Dacron', see the diagram right), which can either be sewn or 'stented' (held) in place.

'Open repair' of abdominal aortic aneurysms with a graft

Open repair of abdominal aortic aneurysms is a major operation, and you would need to be in hospital for approx. 7 to 10 days. Under a general anaesthetic, an incision (cut) is made in the abdomen. Then the abdominal aorta above and below the aneurysm is controlled and clamped to stop bloodflow, which enables the aneurysm to be opened up and a new artificial artery sewn in to replace the dilated segment. The clamps are then removed to restore the bloodflow, and the abdomen is sewn up.

Risks and complications of an 'open' operation with a graft

The major complications of the open operation are the risk of either bleeding or problems with the heart, which is put under some strain when the clamps are placed on the abdominal aorta. There can be problems resulting from a reduction in bloodflow to the legs and kidneys during or after the operation. Overall, the incidence of serious complications is 5 to 7%.

What alternatives are there to having an open operation?

A relatively new technique that is being tested in hospitals is to use a 'stent' to help repair abdominal aortic aneurysms (see the diagram below).

The aim of this technique is to perform a less major operation, which can be tolerated better by more patients. Depending on the shape and size of the arteries around the aneurysm, the

abdominal aortic aneurysm can be repaired from the groin. This operation usually involves making small cuts on each side of the groin under general anaesthetic. A graft is then inserted into the abdominal aortic aneurysm through an artery in the groin. Special stents are used to hold the graft in place.

What are the results of this stent-graft technique?

The results of these stent-grafts are still being evaluated.

Referrals

These operations are highly advanced and discussion about them should always be between the patient and a specialist. Referrals can only be accepted from general practitioners or specialists.