

Contrast-enhanced ultrasound and/or colour duplex ultrasound for surveillance after endovascular abdominal aortic aneurysm repair: a systematic review and economic evaluation

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Plain English summary

Ultrasound surveillance after abdominal aortic aneurysm repair

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An abdominal aortic aneurysm is a swelling of the lower part of the major blood vessel that supplies blood to the body. A type of keyhole surgery (called endovascular abdominal aortic aneurysm repair) can be used to repair the aneurysm, but it can cause some complications to the patient. People are, therefore, followed up (surveillance) for a very long time after surgery so that complications can be identified and treated appropriately. Follow-up includes taking images of the abdomen with technologies like computed tomography angiography (CTA) or ultrasound – either colour duplex ultrasound (CDU) or contrast-enhanced ultrasound (CEU) – or a combination of these techniques. CTA is considered to be accurate, but it carries the risk of repeated exposure to radiation and a potentially unpleasant contrast agent. Ultrasound has been suggested as a possible, safer, alternative, but it is currently not used in all hospitals. It is therefore unclear which type of imaging technique is best. How frequently imaging tests should be carried out is also unclear. We assessed the current evidence on the use and costs of the two types of ultrasound (CDU and CEU) compared with CTA. We identified 27 studies, mainly of poor or moderate quality, that reported different types of follow-up after aneurysm surgery. Because the studies were very different, we could not combine data or draw firm conclusions. The economic evaluation showed that CDU was the best value for money for the NHS for people at a normal level of risk of developing complications. CTA was the next-best value and CEU was the least-best value for money. CDU might therefore be an appropriate alternative to CTA for the long-term follow-up of some patients after aneurysm surgery, but there is a need to identify how often imaging should occur, taking a person's individual risk of developing complications into consideration.

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