HEALTH TECHNOLOGY APPRAISAL: NICE Health Technology Appraisal - Assessment Report On ABDOMINAL AORTIC ANEURYSM: TREATMENT BY ENDOVASCULAR STENT-GRAFTING

TO: NICE	FROM: NHS Quality Improvement Scotland

Background

The object of intervention for abdominal aortic aneurysm (AAA) disease is the prevention of premature death due to aneurysm rupture.
The conventional means of achieving this goal is open surgical repair in which a prosthetic graft is inserted surgically into the aneurysmal segment of aorta via a laparotomy.
Endovascular stent-graft repair (EVAR) offers an attractive alternative to open surgery as it is performed via small groin incisions, thereby avoiding laparotomy and aortic clamping. Other benefits of this approach are faster recovery and less requirement for intensive care facilities.
By contrast, patients treated successfully with open surery are essentially considered “cured” and are discharged from any further follow-up. EVAR patients require long-term follow-up including seruial imaging of the stent-graft with CT scanning as the long-term function of these grafts is still not known. A proportion of the EVAR patients will require some form of secondary intervention to manage so-called “endoleak” where the CT scan or other imaging has demonstrated blood flow in the aneurysm sac.

Current clinical practice

Current UK practice in the management of infra-renal AAA has been guided by the EVAR trials. In the EVAR 1 trial patients with AAA who were fit for open surgery and whose aneurysm was anatomically suitable for EVAR were randomised to either open surgery or EVAR. The significant benefit of EVAR was a lower operative mortality (2% vs 5%). Over 4 years follow-up, no further differences were identified between the groups in terms of survival. The EVAR group required significantly more re-interventions. The EVAR 2 trial compared EVAR to medical management in patients not fit for open repair. The operative mortality for the EVAR group was 9% but over 4 years of follow-up the mortality rate was similar between the groups. This study concluded that there was no survival advantage gained from EVAr in unfit patients although there was a high cross over from the medical group, rendering these conclusions less robust.

At the moment, practice in the UK varies according to a number of factors. Experience with EVAR, pattern of referral, availability of facilities and personal preference of clinicians all play a part.
Nevertheless, generally in patients with AAA whose aneurysm has reached the dimensions where intervention to prevent rupture is indicated (diameter > 5.5cm) consideration is given to their suitability for EVAR vs open repair. Most surgeons would opt for open repair in younger patients as the durability of EVAR is still questionable. Equally, for older fit patients or those who are less fit, but anatomically suitable, EVAR would be the treatment of choice.

Summary of findings of the York Economic Evaluations Group

EVAR is not cost effective for patients of good or moderate fitness compared to open surgery
EVAR is more cost-effective for older patients (74-78) with medium or large-sized aneurysms and for less fit older patients (up to 83 years) with large aneurysms.

Opinion

Most vascular surgeons have altered their practice considerably since the publication of the EVAR (and similar) trials such that EVAR accounts for a significant proportion of their elective infra renal AAA surgery. This is based upon the significantly better operative mortality for EVAR over open repair found in the trials.
Therefore, it will take a very strong argument, supported by robust data to persuade many to revert to open surgery for a proportion of their patients. Nevertheless, the case made by the in the Systematic Review and Economic Model of the CRD/CHE technology Assessment Group from the University of York is quite compelling.
In defining recommendations for best practice it will be necessary to take the results of this study into careful consideration.
In pure health economic terms it seems that open repair is the treatment of choice for younger, fit patients. One question that arises from this is what should be the upper limit in terms of age being defined as “young”. Another issue is to have rigorous criteria defining what constitutes “fit” vs “unfit”. Until some of these points are clarified, I suspect that it will be difficult to persuade surgeons, especially those with extensive EVAR experience, to revert to open surgery. Also, with increasing public awareness of EVAR and its potential advantages, surgeons will be put under pressure to offer this treatment modality no matter what the expense.

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