

Difficult Decisions

Symptomless abdominal aortic aneurysm in the elderly

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Our perception of the age at which a patient becomes elderly is liable to alter when policemen start to look younger but more objective changes have also been at work. Because of lower birth rates and increased life expectation people over 65 now comprise 15% of the population of England and Wales. Immunisation, antibiotics and improved social conditions have eliminated or emasculated many diseases of the young and middle aged so that acute medical and surgical wards in our hospitals now contain few patients under 65. In the country of the blind the one eyed man is king and in hospital practice today elderly means at least 75.

In men aged 75 to 84 abdominal aortic aneurysm (AAA) is common and rupture of an aneurysm is responsible for 1.4% of all deaths.¹ In women of the same age the risk of death from this cause is only one fifth as great but there are almost twice as many women so deaths from AAA in men account for 72% of the total. The prevalence of AAA in men and women over 75 is unknown but 2.3% of men aged 65 to 74 have an AAA more than 4 cm in diameter² and the incidence of the disease increases with advancing age. Most AAAs will remain symptomless until they rupture but many will be detected by routine abdominal examination or abdominal ultrasonography for unrelated symptoms. The incidental diagnosis of an AAA should be looked upon with at least the same seriousness and urgency as the incidental diagnosis of a carcinoma. Without treatment AAA is more likely to be fatal than many cancers in the elderly and has the great advantage of usually being completely curable.

The management of a patient with a symptomless AAA provides one of the purest opportunities in medical practice for the application of risk benefit analysis. Only one treatment, replacement of the aneurysmal aorta with a synthetic graft, is known to be effective and the sole reason for treatment is to prevent premature death from rupture of the aneurysm. The

decision is made by balancing the risk of rupture against the operative mortality and morbidity.

The risk of rupture is closely related to the size of the aneurysm³ although other factors such as the presence or absence of occlusive arterial disease,⁴ hypertension⁵ and obstructive airways disease⁶ may also have an effect. Autopsy studies of patients with known AAA who had received no treatment showed that rupture of the aneurysm caused more than half of all deaths when the aneurysm was over 5 cm in diameter.⁷ Esselstyn⁸ reported that 16% of untreated patients over 75 years old died from aneurysm rupture within a year of diagnosis. More recently Cronenwett⁹ has shown that even in patients with small AAAs (mean 3.9 cm diameter) the annual risk of rupture is the same as the mortality from all other causes. The natural history of all AAAs more than 4 cm in diameter can no longer be studied since patients who are otherwise well and have a reasonable life expectation will usually be offered elective surgery. It is salutary to note that in patients with major coexistent diseases which preclude elective surgery and which might be expected to cause the patients' early demise, the actual cause of death is often rupture of the aneurysm.^{9–11} Some surgeons have sought to minimise the risk of rupture by frequent ultrasound measurement of patients with smaller aneurysms who were unfit for early elective surgery but such studies provide little comfort. In Sterpetti's study⁴ two of 17 high risk patients with aneurysms 4.5–6 cm in diameter ruptured their aneurysms before reaching the predetermined elective surgery threshold of 6 cm.

Most patients who rupture an AAA will die before they can be admitted to hospital¹² and even in major vascular surgical units the overall operative mortality exceeds 30%.^{13,14} In those over 80 years of age mortality is generally twice that in younger patients¹⁵ so there can be no justification for waiting until aneurysm rupture occurs in the belief that heroic and usually nocturnal surgery will save the day.

Elective resection of an AAA is now a relatively safe routine operation with an operative mortality which

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Received: 20 February

has been less than 5% in regional vascular units for the last decade and is still falling.^{13,15} There has been a reluctance in Britain to recommend elective surgery for asymptomatic aneurysms in patients over 80 but this reticence is becoming increasingly difficult to justify. Mean life expectation for a man aged 80–84 is around 5 years and for a woman 2 years more. Patients who survive either elective or emergency surgery for an AAA are known to have a similar life expectancy to normal populations of the same age.¹⁶ Reports from North America show that in healthy patients age alone is not a contraindication to elective AAA resection. Sterpetti⁴ achieved an operative mortality of 4.3% in low risk patients over 75 years with AAAs more than 4.5 cm in diameter. In Ontario¹⁷ and California¹⁸ elective surgery in 69 patients over 80 years was performed with only 4 deaths (5.8%) and most

survivors had a post-operative recovery and rehabilitation similar to younger patients.

In the well motivated octogenarian with good heart and lungs who still feels too young to die, elective resection of an AAA should be seriously considered. All the evidence shows that when the aneurysm is more than 4.5 cm in maximum external diameter the best chance of survival to the end of the year is provided by elective surgery performed in a specialist regional vascular unit. The risks and benefits of treatment can be presented in such a clearcut way that genuine informed consent becomes a realistic possibility. When a symptomless AAA is discovered in an elderly patient, paternalistic, death is best doctors should present the evidence then stand back and let the patient decide for himself.

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