Is abdominal aortic aneurysm familial?

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Abdominal aortic aneurysm is largely a disease of men and is rare before the age of 50. Only a small proportion of aneurysms are diagnosed during life; most are not fatal, and death from ruptured aneurysm may not be detected unless necropsy is performed. In addition, abdominal aneurysm is not familiar to the public, and people who have the disease are more likely to be aware of affected relatives than those who do not. For these reasons the prevalence of abdominal aneurysm in first degree relatives has not been established.

Patients, methods, and results

The probands were 108 patients (102 men, six women) admitted to hospital with a primary diagnosis of abdominal aortic aneurysm. We asked them about all first degree relatives except their children. Ages and remembered causes of death of first degree relatives who had died and names and addresses of parents and siblings still alive were recorded. All brothers aged 50-79 and sisters aged 55-79 thought likely to attend were invited to this hospital for ultrasound scanning of the abdominal aorta.

Five fathers and one mother were unknown. One father and four mothers were still alive but aged over 80. Of 301 siblings, 136 were known to be dead (77 men and 59 women). Thus 179 fathers or brothers were dead, of whom six (3%) were thought to have died from a ruptured abdominal aortic aneurysm. Two (1%) of the 162 mothers or sisters who had died were believed to have had a ruptured abdominal aneurysm.

Altogether 143 siblings were within the age ranges defining eligibility for ultrasound scanning. We could not scan 56 because they lived overseas, their addresses were unknown, or they were too ill to travel. Thus we invited for examination 87 siblings living in England or Wales; 31 attended. One man declined the invitation because he was soon to have an abdominal aortic aneurysm resected in his local hospital. We detected abdominal aortic aneurysms in four of the 16 men who attended but none in the 15 women. Thus of 17 brothers examined by ultrasound, five (29%), who were related to four probands, had an abdominal aortic aneurysm.

Comment

The occurrence of abdominal aortic aneurysm in members of the same family has been reported,3 and the incidence has been estimated at three4 and eight times5 the incidence in the control population. Ruptured abdominal aortic aneurysm causes 0·8% of deaths of men and 0·2% of deaths of women each year in England and Wales. In our study the incidence of death from ruptured aneurysms in male first degree relatives was 3·3% and therefore about four times that expected. This result, and the findings of both previous studies,4,5 relied on the accuracy of certification of cause of death and the relatives’ understanding and subsequent memory of it.

In no previous study have siblings of patients with abdominal aortic aneurysm been examined with a reliable screening test for the disease. Screening unsolicited men aged 65-74 yields a prevalence of abdominal aortic aneurysm of 5-4%.6 The prevalence in men over 50 is not known but is probably less than 2%. This compares with the 29% found on ultrasonography in brothers of patients with abdominal aortic aneurysm. Our results support the hypothesis that abdominal aortic aneurysm is a familial disease.

References


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