

Determination of the expansion rate and incidence of rupture of abdominal aortic aneurysms.

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Abstract

Expansion rate and incidence of rupture of abdominal aortic aneurysms in relation to their size is a source of debate. We studied 114 patients (out of a cohort of 752 consecutive patients admitted with abdominal aortic aneurysms) who were denied any immediate operation because of patient's refusal, high surgical risk, or small transverse diameter as assessed by CT scanning and ultrasonography. All patients not operated on underwent from two to six repeated examinations during an average follow-up period of 26.8 months (range, 3 to 132). Forty-seven patients (41.2%) were subsequently operated on electively because of marked increase of transverse diameter of the aneurysm (n = 44) or for other reasons (n = 3), with a death rate of 0%. Eighteen other patients underwent emergency operation for leaking or ruptured aneurysms, and there were five deaths. The incidence of rupture was clearly related to the final diameter value, rising from 0% in aneurysms less than 40 mm to 22% in large size aneurysms (greater than or equal to 50 mm). Among the 49 patients not operated on, one died of rupture before operation and five of causes unrelated to the disease. Using individual serial measurements, we determined the linear expansion rate of the aneurysm, which proved to be related to initial diameter values: 5.3 mm/year for diameters less than 40 mm (n = 49), 6.9 mm/year in the 40 to 49 mm group (n = 41), and 7.4 mm/year for diameters of 50 mm or more (n = 24).