Abdominal palpation had moderate sensitivity and specificity for detecting abdominal aortic aneurysm

Fink HA, Lederle FA, Roth CS, et al. **The accuracy of physical examination to detect abdominal aortic aneurysm.** Arch Intern Med. 2000 Mar 27;160:833-6.

QUESTION

In adults who were > 50 years of age, is abdominal palpation accurate for detecting abdominal aortic aneurysm (AAA)?

DESIGN

Blinded comparison of abdominal palpation with ultrasonography.

SETTING

Veterans Affairs Medical Center, Minneapolis, Minnesota, USA.

PARTICIPANTS

200 participants who were 51 to 88 years of age (mean age 73 y, 98% men) and had known AAAs (≥ 3 cm in diameter) (n = 99) or known absence of AAAs (n = 101).

DESCRIPTION OF TEST AND DIAGNOSTIC STANDARD

2 internists independently examined patients who were in a supine position with raised knees and relaxed abdomen (400 examination findings). Internists attempted to identify aortic pulsation by deep palpation of the upper abdomen. An AAA was considered to be present when the aorta was judged to be ≥ 3 cm in maximum diameter after accounting for skinfold thickness. The diagnostic standard was ultrasonography.

MAIN OUTCOME MEASURES

Sensitivity and specificity for detecting AAA.

MAIN RESULTS

Results are shown in the Table. Palpation had higher sensitivity in patients with abdominal girth < 100 cm (40 inches) than in those with girth ≥ 100 cm (P < 0.001), in patients whose abdomens were not rated as obese than in those whose abdomens were rated as obese (P < 0.001), and in patients whose abdomens were not rated as tight than in those whose abdomens were rated as tight (P < 0.005) (Table). Sensitivity was high in patients whose aortas were palpable, including those whose abdomens measured ≥ 100 cm (Table).

CONCLUSIONS

In adults who were > 50 years of age, abdominal palpation had moderate sensitivity and specificity for detecting abdominal aortic aneurysm. Sensitivity was higher in patients whose abdomens were < 100 cm (40 inches) and were rated as not being tight or obese. Sensitivity was high for patients with palpable aortas.

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Test characteristics of abdominal palpation for detecting abdominal aortic aneurysm*

Patient group	Sensitivity (95% CI)	Specificity (CI)	+LR	–LR
All examinations	68% (60 to 76)	75% (68 to 82)	2.7	0.43
Girth < 100 cm	91%	64%	2.5	0.14
Girth ≥ 100 cm	53%	83%	3.2	0.56
Abdomen not obese	89%	66%	2.6	0.17
Abdomen obese	46%	84%	2.9	0.64
Abdomen not tight	74%	68%	2.3	0.38
Abdomen tight	52%	89%	4.7	0.54
Aorta palpable	88%	56%	2.0	0.22
Girth ≥ 100 cm and aorta palpable	82%	59%	2.0	0.30

*LRs defined in Glossary.

COMMENTARY

AAA may remain asymptomatic until rupture, which makes the diagnosis of the condition too important to be missed. The study by Fink and colleagues shows that abdominal palpation may not be accurate enough to detect AAA or to assess changes in size. In marked contrast to elective procedures, the mortality of surgical repair for rupture remains high. A multicenter randomized study on ultrasonographic screening of AAAs is currently being done in the United Kingdom. However, a previous study showed a benefit for screening, with 55% fewer ruptures in men who were screened than in men who were not; this study also showed that the incidence of rupture in women was low (1). First-degree relatives of patients with AAAs should also be screened (2). The potential rupture rate (actual rupture rate plus elective surgery rate) for aneurysms measuring 3.0 to 4.4 cm in diameter is 2.1%/y (3). This rate increases to 10.2%/y for aneurysms measuring 4.5 to 5.9 cm. Surgery is recommended for aneurysms > 6 cm and for those with diameters between 4.5 and 5.9 cm if they increase by > 1 cm/y or if they become symptomatic.

Until evidence from randomized controlled trials is available, I recommend that all men should have an ultrasonogram at 65 years of age. Any patients with an aortic aneurysm diameter of 3 to 4 cm should have an annual ultrasonogram. Patients with aneurysms that have a diameter of 4 to 5 cm should have scans twice/y and those with a diameter of 5 to 5.5 cm should have scans 4 times/y. An aneurysm that increases by 1 cm in 1 year should be treated, as should an aneurysm that becomes tender.

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References

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