The prevalence of epigastric bruit

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SUMMARY. A study was undertaken to determine the prevalence of an epigastric bruit in a family practice population.

Auscultation of the abdomen in the supine position was carried out on 567 consecutive unselected patients. A systolic bruit, localized to the epigastrium, was heard in 80 patients, none of whom had symptoms of intra-abdominal vascular disorder.

The results are tabulated by age and sex, and show statistically significant differences in prevalence between males and females of similar ages, and also between different age groups of the same sex. The highest prevalence is in females aged between 10 and 34 years and no significant difference is found between pregnant and non-pregnant females of comparable age.

Introduction

IN 1977 I reported two cases of coeliac artery compression syndrome seen in family practice. Localized epigastric bruit is the sole physical sign in this condition (Dunbar *et al.*, 1965), and estimates of the occurrence of such a bruit in normal people vary widely. The prevalence of an epigastric bruit has been reported to be 6·5 per cent (Edwards *et al.*, 1970) and 15·9 per cent (Julius and Stewart, 1967), while it is said to be 31 per cent in psychiatric inpatients, and 27 per cent in patients referred for gastroenterological consultation (Watson *et al.*, 1973). Despite the discrepancy between these estimates, all of these studies indicated equal distribution between the sexes and showed that the frequency of this finding was greatest in the age group 15 to 34 years.

Aim

My clinical impression was that an epigastric bruit could be heard at a random observation in considerably more females than males in any given age group, and this study was undertaken to test this hypothesis.

Method

A total of 567 patients were studied during the month of April 1977. They were unselected and were seen consecutively during the course of active family practice. They were not all patients of the practice; some were simply companions of patients who readily agreed to participate in the study. They ranged in age from a few months to 83 years. The practice patients suffered from the usual wide range of ailments which present in family practice. One person was included in the study who had undergone successful surgical decompression of the coeliac axis, and she did not now have an epigastric bruit. Some healthy pregnant women took part in the study and this gave fresh interest as no previous work had included such a subgroup.

The methods used were identical throughout the study, which began with the first patient seen on the first working day of April 1977. In every case, auscultation of the abdomen was carried out with the patient in the supine position, lying comfortably at rest on an examination couch in a quiet room. The same bell-diaphragm binaural stethoscope was used by the same physician for every observation. The observations were made throughout normal working hours, 09.00 to 12.00 hours and 14.00 to 18.00 hours daily. Those who were seen more than once during the study period had auscultation performed on each occasion but the result was recorded once only.

The only bruit accepted for the purposes of the study was one audible in the epigastrium with the patient supine, localized to the epigastrium without conduction to either flank or proximal/distal along the aorta, and audible without pressure of the stethoscope on the abdominal wall.

Table 1. Incidence of epigastric bruit of all grades. Comparison according to age, sex, and pregnancy.

	Females			Males			
Age in years	With bruit	Total	Per cent	With bruit	Total	Per cent	p
<10	0	19	*0*	0	12	*0*	NS
10-14	7	20	*35*	0	11	*0*	<0.02
15-24	28	113	*24.7*	4	47	*8.5*	<0.02
25-34	20	77	*25.9*	1	35	*2.8*	<0.01
35-44	8	48	*16.6*	0	39	*0*	<0.01
45-54	4	27	*14.8*	0	24	*0*	<0.05
55-64	0	23	*0*	1	12	*8.3*	NS
65+	1	11	*9*	1	25	*4*	NS
Pregnant	5	24	*20.8*				NS
Total	73	362	*20.16*	*7*	205	*3.4*	<0.001

NS Not significant.

Bruits were graded as: 1 = faint, but definite; 2 = definite, but not loud; 3 = loud. A total of 80 such bruits were heard; 26 were grade 1, 43 were grade 2, and 11 were grade 3.

Results

The results are summarized in Table 1 in such a way as to allow easy construction of fourfold tables in order to calculate χ^2. The following statements about epigastric bruit may be made:

It is more common in females, being present in 73 of 362 females and 7 of 205 males of all ages ($p<0\cdot001$).

There is no significant difference in prevalence between pregnant and non-pregnant females aged 15 to 34.

An epigastric bruit is more common in females aged between 10 and 34 years; there is no significant difference in prevalence between age groups 10 to 14, 15 to 24, and 25 to 34, p being greater than $0\cdot10$ in each case. However, the difference between those aged between 10 and 34 years and all other females is highly significant ($p<0\cdot001$).

Although a bruit was heard more often in males aged 15 to 34, there proved to be no significant difference between that age group and all other males ($p>0\cdot05$).

Discussion

A recent leading article in the *British Medical Journal* (1977) summarized present knowledge of the coeliac axis compression syndrome and drew attention to its enigmatic nature. It remarked on the unreliability of its sole physical sign, an epigastric bruit, as a specific indicator of disease. In the present study, out of 80 patients with a bruit, none had symptoms suggesting abdominal vascular disease and, in fact, only one had abdominal symptoms. Whatever the special relevance of this bruit in coeliac axis compression may be, it is quite clear from the results of this study that a bruit is a common finding in those who have no disease. The finding of a bruit in a healthy person is innocuous and adventitious.

During this study, two patients were found to have a bruit while suffering acute febrile illness, but on subsequent re-examination during convalescence the bruit could not be heard, suggesting strongly that the bruit was the result of some transitory haemodynamic mechanism. A bruit had been noted in two young women before the study and on examination during the study could not then be heard.

Conclusion

An epigastric bruit is a common finding, especially in young women. It can come and go in the same person and, in the population under study, it was not associated with morbidity.

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