

# Continuing fall in the incidence of acute appendicitis

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Previous reports have shown a marked decrease in the incidence of acute appendicitis. This study has set out to discover whether this decrease has continued.

The pathology records over 15 years have been reviewed to tabulate the frequency of appendicitis in one large district general hospital. The results were then analysed statistically.

The incidence of acute appendicitis was seen to decrease from approximately 100 to 52 over the 15-year period.

This continuing decrease in the incidence of acute appendicitis has implications on acute surgical bed usage, experience for trainee surgeons and referral patterns for general practitioners.

A number of authors have noted a decrease in the incidence of acute appendicitis in the western world since 1945 (1–4). Improving social conditions and diet have been suggested as possible causes, but there has been little recent interest in whether this trend has continued.

Appendectomy has often been regarded as the introduction to gastrointestinal surgery for the trainee surgeon, but the opportunities to perform the procedure seemed to be increasingly limited in my early career. Instead, much time was spent seeing patients referred as appendicitis but who were later diagnosed to have non-specific or gynaecological conditions. If acute appendicitis is becoming relatively rare there are implications on acute surgical bed usage, the training of junior surgeons and general practitioner referral patterns. I have therefore looked at the changing incidence of acute appendicitis in one district health area.

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## Methods

North Tees General Hospital is the sole acute hospital serving the town of Stockton-on-Tees and its surrounding area in north-east England. Since opening in 1975, it has served a stable population of approximately 200 000.

The pathology records have been reviewed for each of the years 1975–1991 and the number of acutely inflamed appendixes recorded. This is the most accurate way of analysing appendicitis (5). The results were analysed statistically using simple linear regression and Pearson's product moment correlation.

## Results

The results are displayed in Fig. 1. This shows a statistically significant ( $P=0.0001$ ) fall in the frequency of acute appendicitis in the North Tees District. The inci-

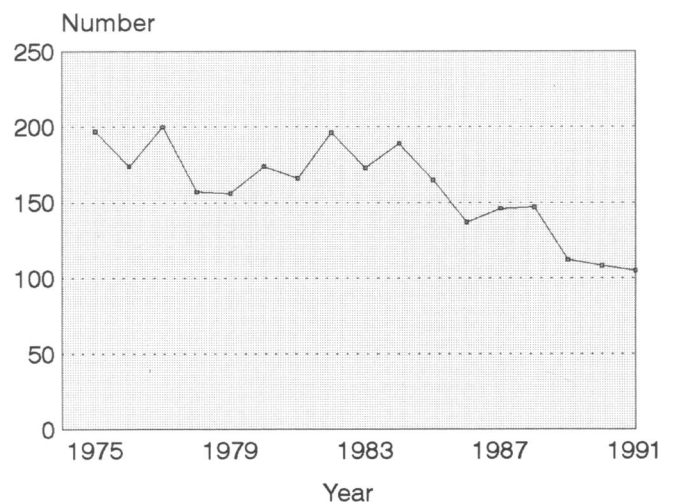


Figure 1. Frequency of acute appendicitis 1975–1991.

dence over the last 2 years of the study is approximately 52 cases per 100 000 population.

## Discussion

Previous studies looking at the incidence of acute appendicitis are summarised in Table I. Other studies commenting on a decreased incidence cannot be represented as they do not define their population size (1–3). A downward trend has been noted in all studies, with the exception of the Dumfries and Galloway study which suggested a levelling out of the incidence (8). The validity of some of these reports must be questioned as they have been taken from total appendectomy rates (including non-inflamed cases) (2–4,8) or from hospital or area data bases, which can be inaccurate (7). Thus, the incidence of acute appendicitis has probably been overestimated in the past. The initial incidence in this study (approximately 100 per 100 000 population) is similar to the previous reports and can be seen to almost halve over 15 years. It may be that the incidence in other parts of the country is even less (7).

On average, a busy surgical unit such as North Tees is now seeing only two cases of acute appendicitis per week. There are eight junior surgeons (four SHOs and four Registrars) at the hospital, which gives each the opportunity to perform one appendectomy for acute disease per month. So called 'normal' appendectomy is increasingly uncommon because of better diagnostic aids such as ultrasound and laparoscopy (9). Thus, the traditional introduction to laparotomy for the surgical trainee is being lost.

Table I. Previous reported incidence of acute appendicitis

Area	Year	Incidence per 100 000 population	Reference
England	1956–1957	210	6
England	1972	140	6
Northern England	1974–1977	115	7
Norway	1977–1978	140	6
Scotland	1975–1979	120	8

From these figures the average general practitioner (practice size 2500 patients) will be seeing one or two cases of appendicitis per year. Even allowing for a diagnostic inaccuracy of 50%, the doctors really must question themselves if they are referring more than four cases of possible appendicitis per year. The incidence of admission for acute pelvic inflammatory disease in young women is approaching 200 per 100 000 and is increasing (10). It may be more appropriate for the majority of emergency admissions in this group to be made to gynaecologists. If doubt remains, the general practitioner must seek a surgical opinion.

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