Chest pain—indigestion or impending heart attack?

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Summary
A high proportion (40%) of patients with definite myocardial ischaemia who were questioned on admission to a Cardiac Monitoring Unit had experienced preceding chest pain which had been misinterpreted by both the patients themselves and doctors as 'indigestion' and which had often been inappropriately treated. 'Indigestion' in the chest in previously non-dyspeptic subjects over 40 years of age should be regarded as myocardial ischaemia until proved otherwise.

KEY WORDS: antacids, myocardial infarction.

Introduction
There has been considerable recent interest in the differential diagnosis of chest pain, with much attention being paid to possible gastrointestinal causes (Bennett, 1983). However, we have gained the impression that the reverse situation is also common, in that a substantial proportion of patients admitted to our coronary care unit with suspected acute myocardial infarction have experienced pain in the chest in the weeks preceding, or immediately prior to admission, which they or their general practitioners had diagnosed and treated as 'indigestion'. We therefore designed a prospective study to see how frequently this diagnostic misinterpretation was made.

Methods
Eighty-two consecutive patients admitted to the cardiac monitoring unit serving North Humberside with suspected acute myocardial infarction were questioned as to the nature of their presenting chest pain, the presence of any preceding symptoms, their interpretation of these symptoms, and any action taken by them or their general practitioners. Care was taken not to lead the patient; thus 'what did you think the discomfort was?' was preferred to 'did you think it was indigestion?'. Questioning was carried out on admission, before the electrocardiogram (ECG) was performed.

The electrocardiographic diagnosis of acute anterior and posterior myocardial infarction was based on the criteria of the World Health Organisation (W.H.O., 1959). The diagnosis of coronary insufficiency was made in the presence of prolonged (20 min or more) typical ischaemic myocardial pain without ECG or enzyme evidence of recent infarction or necrosis.

Results
Forty-six patients (34 male) were found to have suffered myocardial infarcts (age range 38–82 years), 24 (15 male) had coronary insufficiency (age range 45–81) and 12 had non-cardiac chest pain. Twenty-eight (40%) of the 70 patients considered to have myocardial ischaemia (acute myocardial infarction or acute coronary insufficiency) had experienced prodromal chest pain which they had ascribed to 'indigestion' (see Table 1). Only four (14%) of these 28 patients had previously suffered from regular dyspepsia. In each instance, the previous dyspeptic pain was epigastric and a different type of discomfort. Seven (25%) of the 28 patients with 'indigestion' in the chest had consulted their general practitioner before the onset of the pain that prompted their admission to the cardiac monitoring unit. Only one was diagnosed as having angina and given nitrates. Twenty (71%) had either bought (14 patients) or been prescribed (six patients) antacids or H2-antagonists. Six of these 20 patients claimed some symptomatic relief. Twelve patients (43%) related their 'indiges-
tion' to exertion or emotion, two related it to eating. Prodromal 'indigestion' had been present for periods varying from 2 days to 12 months before admission (median period 3 weeks). Six patients initially ascribed the pain which precipitated admission to 'indigestion'.

The age and sex distribution of patients with prodromal 'indigestion' was similar to those with myocardial infarction who had not ascribed their pain to indigestion. The proportion of anterior and inferior infarcts in the two groups was also similar.

At follow-up 6 months later eight patients were still experiencing chest pain identical to their previous 'indigestion'. Four were taking sublingual nitrates, four were still taking antacids (one prescribed by the general practitioner), and one had been investigated by barium meal with negative results.

**Illustrative case histories**

**Case 1.** A 45-year-old male who had previously suffered only mild and occasional heartburn began to experience central chest discomfort unrelated to effort or food. He was advised to take a light diet and Gaviscon was prescribed by his general practitioner, but the pain persisted. Three days later he experienced a more severe attack of pain and was prescribed cimetidine. He was told to take a tablet as soon as possible. He followed these instructions but did not improve. Two hours later he presented himself to the Accident and Emergency Department and was admitted to the Coronary Monitoring Unit. Transmural anterior myocardial infarction was confirmed and he made an uncomplicated recovery. At follow-up he was complaining of exertional chest discomfort for which Gaviscon had been prescribed without benefit!

**Case 2.** A 42-year-old woman had suffered from mild abdominal dyspepsia for many years. For a year she had experienced exertional chest discomfort of a different character for which she had taken peppermints and for which Aludrox had been prescribed without effect. A barium meal was normal. The prolonged severe chest pain precipitating admission she ascribed to 'indigestion' but there were associated transient ST and T wave changes in the electrocardiogram characteristic of myocardial ischaemia. Since discharge she has continued to have chest pain and continues to take mints and Aludrox but has not tried sublingual nitrates despite being supplied with them!

**Case 3.** A 58-year-old man had suffered from chest discomfort on exertion for a year. For 3 weeks before admission with severe chest pain, which proved to be an inferior myocardial infarction, his 'indigestion' had been worse. He had thought the pain of his infarct was 'severe indigestion'. Since discharge he continues to have exertional 'indigestion' which is promptly relieved by sublingual glyceryl trinitrate.

**Discussion**

Up to two-thirds of patients who develop acute myocardial infarction have experienced the onset of angina or worsening of pre-existing angina in the month before the attack (Julian, 1979). 'Indigestion' is a common complaint and may be used to describe almost any discomfort in the chest or abdomen without promoting undue anxiety. In contrast, the concept that chest pain may be caused by heart disease is likely to arouse apprehension and fear. It is not, therefore, surprising that many patients suffering from angina for the first time attribute their chest pain to 'indigestion'. Fifty per cent of our patients who mistakenly thought they were suffering dyspepsia had taken proprietary antacids. Twenty-five per cent had consulted their general practitioner and in only one instance was angina recognized. This perhaps reflects the relative lack of a classical relationship to exercise, an occasional apparent relation to eating, the often atypical character of the pain, and the relatively high incidence of non-specific gastro-intestinal features (nausea and flatulence) that may accompany angina or acute myocardial infarction (Feil, 1937; Fitts, 1961; Short and Stowers, 1972).

Relatively few patients thought the pain precipitating admission was 'indigestion' and in only one case did this mis-diagnosis cause a clear delay in transfer to hospital. Surprisingly, four of the eight patients

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**TABLE 1. Characteristics of prodromal 'indigestion' in patients with myocardial ischaemia**

<table>
<thead>
<tr>
<th>Proven myocardial infarction (n = 46)</th>
<th>Coronary insufficiency (n = 24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preceding 'indigestion' in the chest</td>
<td>21</td>
</tr>
<tr>
<td>Consulted general practitioner</td>
<td>5</td>
</tr>
<tr>
<td>General practitioner prescribed antacid</td>
<td>4</td>
</tr>
<tr>
<td>Self-treatment with antacid</td>
<td>13</td>
</tr>
<tr>
<td>'Indigestion' related to exercise or emotion</td>
<td>8</td>
</tr>
<tr>
<td>'Indigestion' related to eating</td>
<td>2</td>
</tr>
<tr>
<td>Relief by antacid</td>
<td>5</td>
</tr>
<tr>
<td>Pain precipitating admission thought to be 'indigestion'</td>
<td>5</td>
</tr>
</tbody>
</table>
with continuing chest pain after discharge from hospital with a diagnosis of coronary artery disease were still taking antacids rather than anti-anginal drugs.

These results suggest that chest pain, whether typically anginal or not, in previously non-dyspeptic subjects over 40 years of age should be regarded as suspicious of myocardial ischaemia. The old clinical aphorism 'When a young man complains of his heart, think of his stomach; when an old man complains of his stomach, think of his heart' should not be forgotten but merely modified to allow for the current age and sex distribution of ischaemic heart disease.

References


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