Non-cardiac chest pain: assessment and management

Chest pain is a common reason for patients to attend cardiac clinics, but the cause of pain in more than 50% of these patients is non-cardiac.1 In a recent study of 660 consecutive referrals to a "one stop" clinic, only 27% had a cardiac cause for their symptoms.2 Another group, which is particularly difficult to manage, is that with a combination of ischaemic heart disease and non-cardiac pain.3 Patients with non-cardiac pain have a good outcome in terms of mortality4 but continue to experience pain, tend to remain on cardiac medication, and continue to attend emergency departments, primary care, and outpatient clinics.1 Regrettably, both patient and doctor may find an initial, but erroneous, diagnosis of cardiac pain difficult to revoke.5

Aetiology
Most research has involved patients with a normal angiographic appearance to the large epicardial arteries. Although a small proportion of such patients with ST segment depression may have underlying cardiac disease,6 most have atypical pain and normal exercise tests.7,8 In these patients, a benign non-cardiac cause is likely. Thus about 50% of all patients with normal coronary anatomy and non-cardiac chest pain have oesophageal reflux or motility disorders,9 approximately 60% have evidence of breathing disorders,7,10 and 60% a psychiatric disorder.11 Psychiatric causes include panic, major depression, and health anxiety (hypochondriasis-like and other so called somatoform disorders). However, the clinical significance of oesophageal and respiratory abnormalities is not straightforward as they often do not coincide with pain.10,11 Furthermore, the response to specific treatment is variable1 to raising the possibility that these abnormalities are coincidental rather than causative.

Half of the patients with chest pain and normal angiographic anatomy have two or more of the aforementioned conditions (oesophageal, respiratory, or psychiatric abnormalities).12 Therefore, an alternative view of aetiology is that there are interactions between physiological and psychological causes.4,11 Psychological variables may be of considerable importance, even when there is no diagnosable psychiatric disorder, in that they are associated with the perception and interpretation of bodily sensations. Individual interpretation is affected not only by mental state but also by the patient’s past experience and knowledge of illness, especially of heart disease. Once non-cardiac chest pain has occurred it may be perpetuated by secondary anxiety and by behavioural changes—for example, avoidance of exercise, as well as by the concern of others. Overcautious medical care, lack of explanation or ambiguous and contradictory explanations are common and may make symptoms and disability worse, especially in those who are already anxious.

Assessment: the clinical history
The view that the aetiology of non-cardiac symptoms is multifactorial means that the assessment in primary care or outpatient clinics should encompass not only heart disease but other possible physical causes as well as psychological factors, including the patient’s beliefs and concerns. This can be done with relatively simple standardised questionnaires.12 The possibility of a positive diagnosis of non-cardiac chest pain also needs to be considered.13 A psychological cause is suggested if there is a situational or phobic component to the somatic symptoms. Asking specific questions about panic attacks is important. For example, “have you ever had a panic attack, when you suddenly felt frightened, anxious, or extremely uncomfortable? When you have chest pain how frightened do you feel? What other symptoms do you experience?” It is also worth asking whether the patient has ever experienced or received treatment for nervous problems in the past, and inquiring about recent upsetting events or a history of previous unexplained medical symptoms and multiple current complaints. Depression is less common but it is important to identify the key symptoms of hopelessness, lack of interest, pleasure and concentration, poor sleep, and irritability.

Even if there is no formal diagnosis, psychological factors may still be important contributors to symptoms and disability. It is important to elicit the patient’s beliefs and worries about chest pain, as inappropriate beliefs can perpetuate the symptoms. A suitable question might be “When you experience chest pain, what is your worst fear?”

Investigation and referral
Decisions about further investigation should be based on the assessment of the chest pain characteristics and on the coronary risk profile. A patient with a low risk of coronary disease (for example, young female with no coronary risk factors) and atypical pain seen in primary care does not usually need hospital referral. If referral is necessary because of anxiety or continuing severe symptoms, it should be made with the minimum of delay to the appropriate specialist; this may be a gastroenterologist, rheumatologist or psychiatrist/clinical psychologist. It is important that the patient understands that there are numerous causes for chest pain other than heart disease and that the referral letter outlines the history and the need for an explanation for the symptoms.

A patient with an intermediate or high risk of coronary disease (middle aged male) should usually have non-invasive investigations even if the chest pain is “not typical” of ischaemic pain. This will usually require referral to a cardiologist, or to a one stop chest pain clinic. At this level the minimum of reasonable investigations should be performed; a normal exercise test at high workload in a patient with atypical pain is probably sufficient, with a myocardial perfusion scan as back up for equivocal cases.

Cardiac catheterisation should be reserved for those in whom non-invasive investigation suggests significant disease or for those—for example, bus drivers, whose livelihoods depend on the diagnosis. We believe that patients should be prepared for the possibility of a normal angiogram, as this may help them adjust to the diagnosis and accept and comply with appropriate treatment afterwards.14 Otherwise the patient may believe that the cardiologist has missed something. If normal coronary anatomy is found at coronary angiography, we recommend that the patient is re-assessed after 4–6 weeks when a “stepped” approach to management can be adopted.14
Treatment

We suggest a stepped approach to follow up care with management individually tailored according to clinical need. The initial assessment may suggest symptomatic treatment. Some patients may require no more than simple reassurance and explanation; they are willing to accept that they do not have a grave condition, provided that their symptoms are taken seriously and they are given a satisfactory explanation for the pain. Others find additional follow up discussion, explanation, and advice 4–6 weeks later is helpful. This means a review appointment for all patients and families whether ischaemic heart disease is diagnosed or not, as well as follow up to determine any further need for treatment. There must be provision for easy referral to a rheumatologist, gastroenterologist, or psychiatrist/clinical psychologist. Care based on a symptom rather than a system can be expected to lead to more efficient use of investigations and medical treatment.

Conclusions

A more imaginative approach is needed for the assessment and management of patients with chest pain. Attempts to establish a positive diagnosis of non-cardiac pain at an early stage after presentation would limit the potential for iatrogenic harm and probably reduce disability in these patients. This can be done in many cases by the general practitioner, sometimes with the help of rapid access chest pain clinics or other locally agreed arrangements. There must be a clear explanation and discussion with patients and families whether ischaemic heart disease is diagnosed or not, as well as follow up to determine any further need for treatment. There must be provision for easy referral to a rheumatologist, gastroenterologist, or psychiatrist/clinical psychologist. Care based on a symptom rather than a system can be expected to lead to more efficient use of investigations and medical treatment.