

## Chest Pain Is Not Banal Health Problem

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### Abstract

Chest pain is a common symptom. Some of the causes of chest pain are banal, like pain after a mild injury or pain in the muscles and joints of the chest. On the other hand, some pains are life-threatening, such as a heart attack or aortic rupture. Pain is considered a fundamental challenge in medicine, and almost every day people have experience with pain. Chest pain causes fear and discomfort and when it comes up, people immediately suspects an angina pectoris or heart attack. Chest pain should not always be associated with heart problems because it should be considered gastrointestinal disorders, muscle or bone problems, and lung related pain.

### Introduction

Chest pain is one of the most common reasons for people to seek healthcare advice within primary and secondary care settings in Europe and North America [1]. However, skills and knowledge required to undertake thorough assessment and differentiation of the numerous alternative presentations of chest pain, particularly with regard to triaging potentially life-threatening conditions, remain elusive. A number of studies have reported that between 5 and 30% of patients are discharged with evidence of coronary heart disease.

## Chest Pain

Myocardial infarction, commonly referred to as a 'heart attack' or coronary, is caused by the sudden decrease in coronary blood flow with resulting ischaemic damage to heart muscle [2].

Risk factors include maleness, previous attacks, angina, hypertension, diabetes, claudication, a positive family history, heavy smoking, age over 40 years, diet high in saturated fat, obesity, alcohol intake, sedentary life style and the contraceptive pill.

The clinical picture is one of severe chest pain, retrosternal and radiating to the neck and left arm, associated with sweating, weakness, apprehension, dyspnoea and hypotension. In the worst cases left ventricular failure and cardiogenic shock may result.

Cardiac chest pain is generally a crushing, central pain, radiating to the left arm and perhaps jaw. The pain is similar to that of angina. The patient may be pale, sweating, fearful and holding the centre of his chest. The pain is usually of greater severity and duration than in angina, and is typically present for more than 30 minutes. It is associated with nausea, vomiting, sweating and extreme distress, the patient being cold, clammy, with a tachycardia (fast pulse), raised or lowered blood pressure. Less commonly, the pain may be mild (especially in the elderly), felt in several places, related to moving or breathing, and have an atypical radiation which can make it difficult to diagnose. Occasionally the pain is relieved by nitroglycerine administered as a tablet, patch or spray.

Chest pain is a common reason for a patient to visit his or her family physician [3]. It is also one of the most challenging problems to treat; the differential diagnosis covers the entire spectrum of family medicine, from acute life-threatening conditions to somatoform sensations and worries. The possibility of an acute coronary syndrome (ACS)-ST-elevation myocardial infarction (STEMI), non-ST-elevation myocardial infarction (NSTEMI), or unstable angina (UA)-weighs most heavily in the evaluation of chest pain. Much in the chest aside from the heart can hurt, however, and heart disease is actually one of the less common causes of chest pain in the primary care setting.

The general approach to the patient with chest pain is rapid assessment and treatment of possible life-threatening conditions if present, followed by a careful biopsychosocial evaluation and management of underlying causes. Simply "ruling out MI" is not an adequate stopping point for the family physician's evaluation.

Pain in the chest may emanate from the heart, great vessels, lungs, pleura, ribs, shoulders, muscles, esophagus, or upper abdomen. Pain can also be felt in the chest as part of systemic processes such as panic attacks, thyrotoxicosis, or stimulant use.

## Symptoms

Central chest pain is the most common presenting symptom of coronary heart disease and it is characterised by radiation to the arms, shoulders, neck or jaw [1]. Additional features may include feelings of tightness, constriction or heaviness across the chest that occur following exercise or during rest and that are relieved

by sublingual nitrates. Complaints of chest pain represent between 20 and 30% of all medical admissions and, of these, only a third will be diagnosed as having an acute coronary syndrome. Likewise, of those who are seen in RACPCs (rapid access chest pain clinics), over two-thirds present without a cardiac cause. Presentations of acute, undifferentiated chest pain are thus a common occurrence and a challenge for busy clinicians. However, the rapid identification of non-cardiac and non-life-threatening conditions may assist in ensuring that only those in need of hospital beds have immediate access. Establishing a diagnosis of CHD (coronary heart disease) is not straightforward, as different conditions presenting with pain in the chest mimic cardiac ischaemia and other conditions. Reasons for inaccurate assessment are many and varied. For example, the distribution of nerve endings within the thorax often makes the interpretation of cardiac symptoms more difficult for the patient and examiner.

Chest pain is a symptom most commonly associated with heart disease, but it may also be present in many different disease processes [4]. A thorough history and clinical examination will help the practitioner make a correct diagnosis. The clinical examination is performed after taking a history from the patient. Subjective data obtained from the history will give insight into actual and potential problems and will provide a guide for the physical examination. Objective findings from the physical examination of the cardiovascular and peripheral vascular systems along with results of investigations support or refute each differential diagnosis for a patient who presents with chest pain. Chest pain may also be the result of a pulmonary or gastrointestinal problem, and findings from examining other systems (e.g. chest, thorax and abdomen) may impact judgements that will be made about the patient's presenting complaint. No system should be evaluated outside of the context of the full examination.

## Abdomen

Determining onset of pain can help determine the cause of abdominal pain as well as the need for emergent referral [5]. Abdominal pain is categorized as acute, subacute, or chronic. Symptoms lasting more than 3 months are considered chronic. Acute pain is often associated with peritoneal irritation, such as appendicitis, and abdominal organ rupture and may require emergency management and consultation with a surgeon. Many patients present to the office with more gradual onset or chronic abdominal pain.

A patient's description of the quality of the pain provides clues to etiology. Pain can be sharp, stabbing, burning, dull, gnawing, colicky, crampy, gassy, focal, migrating, or radiating. Pressure like pain ("there's an elephant sitting on me") suggests cardiac ischemia. Focal symptoms help determine location and diagnosis.

Location and radiation of pain are important. The abdomen is separated into four quadrants—right upper (RUQ), left upper (LUQ), right lower (RLQ), and left lower (LLQ)—or as midepigastic or suprapubic. Some causes of abdominal pain have classic patterns of location and radiation. Pain from the lower esophagus may be referred higher in the chest and confused with pain associated with cardiac conditions.

## Chronic Pain

Pain is defined by the International Association for the Study of Pain as "an unpleasant sensory or emotional experience associated with actual or potential tissue damage or described in terms of such damage." [6]. This definition emphasizes that the pain experience is multidimensional and may include sensory, cognitive, and

emotional components. Additionally, the latter part of the definition allows for the possibility, as in chronic pain states, that the overt tissue damage may no longer be present. Pain persisting for >3-6 months is defined as chronic pain. Pain persisting for 3 months, however, is unlikely to resolve spontaneously and may continue to be reported by patients after 12 months. In addition, many of the secondary problems associated with chronic pain, such as deconditioning, depression, sleep disturbance, and disability, begin within the first few months of the onset of symptoms of pain. Studies indicate that early patient identification and treatment are essential to reduce pain chronicity and prevent further disability.

Chronic pain occurs after the acute healing period has been completed or in the context of chronic conditions (eg, neuropathy or arthritis). Restriction of activity in patients with chronic pain leads to deconditioning, with muscle and bone loss that increases pain and the risk for reinjury, and also promotes psychological sluggishness, if not depression. Consequently, the RICE (rest, immobilization, compression, and elevation) approach will actually aggravate the symptoms of chronic pain. The natural response of restricting activities when experiencing pain is appropriate for acute injury pain but aggravates chronic pain. Patients with chronic pain require an active, progressive exercise program. They must learn appropriate strategies for treating pain, avoid a tendency to restrict activity excessively, and resume more normal activity levels through a stepwise, progressive activity program.

### **Non-Cardiac Chest Pain**

Non-cardiac chest pain is a common condition affecting approximately one quarter of the population during their lifetime, but the long term economic costs of non-cardiac chest pain are poorly defined [7]. The diagnosis of non-cardiac chest pain can be difficult due to the heterogeneous nature of the condition, with significant overlap of gastroesophageal reflux disease (GERD), chest wall syndromes, and psychiatric disease, which may drive up the costs of management.

The presence of common symptoms, such as heartburn and regurgitation, usually make the diagnosis of GERD fairly straightforward. However, extraesophageal symptoms of GERD, such as asthma, non-cardiac chest pain, and hoarseness, are often not recognized and are therefore poorly managed. Excessive reflux of gastric contents into the esophagus can cause asthma, chest pain, and globus pharyngeus and other otolaryngologic problems. The exact prevalence of extraesophageal symptoms is not known, and the underlying pathophysiologic mechanisms have not been fully explained, but recognizing this association at the outset may relieve patient suffering and lower health care costs. The possibility of acid reflux should be considered when patients with extraesophageal symptoms present with typical symptoms of GERD or symptoms that are refractory to standard therapy. Further systematic evaluation, often in consultation with a subspecialist, may either establish or confirm the coexistence of GERD. Finally, in many cases, successful treatment of GERD can improve diverse symptoms, such as asthma, chest pain, or hoarseness.

### **Communication**

The consultation is central to general practice, and much emphasis is put on consulting skills during training [2]. Effective communication is essential if the consultation is to result in a mutually satisfactory conclusion, and when a consultation is dysfunctional this may lead to patient dissatisfaction, a complaint, or even an action in medical negligence.

Communication is not just verbal. It has been estimated that up to 70% of communication is non-verbal, involving eye behaviour, posture, position, hand gestures, facial expression, clothes and touch. If the doctor tries to say things he does not believe, the non-verbal messages will leak out and his audience will receive a mixed message. In teaching communication skills it is useful to look at the doctor's ways of communicating verbally and nonverbally. A video recording of consultations allows this to be observed, and is a powerful educational tool.

A successful consultation requires the doctor to discover the reason for the patient's attendance, which can be varied and on occasions surprising. This has to be dealt with to the satisfaction of the patient in order for the consultation to avoid becoming dysfunctional.

## Diagnosis

Before referral for psychological assessment and diagnosis, the symptom of chest pain requires a thorough medical evaluation. The broad differential diagnosis for chest pain includes the possibility for fatal or serious causes, and medical evaluation and rule out is essential [8]. Moreover, psychological treatment cannot commence in the absence of medical release and any medical limitations for care need clarification. For some patients with non-CAD (coronary artery disease) chest pain, assessment of psychological dysfunction may be useful as part of a comprehensive treatment plan. Reactions to anxiety, worry, and general life stress may remit according to a natural course before reaching a diagnostic threshold of distress or impairment. Alternatively, symptoms that follow a pattern typical a psychiatric diagnosis suggest the use of a psychotherapeutic intervention and/or the use of psychopharmacological interventions.

## Quality of Life

Sometimes considered outside of the scope of standard medical care, quality of life is indirectly the most important goal of most patient-provider encounters [9]. Improving physical function, reducing symptom burden, improving energy levels and endurance, managing pain, helping patients return to work, decreasing depression and anxiety, and increasing independence are among the many dimensions of quality of life enhanced from care received in cardiology and primary care settings. Poor quality of life is a frequent concern among patients with chest pain and normal coronary arteries or no obstructive coronary artery disease, with evidence that this population may endure greater quality of life impairment relative even to those with chest pain and obstructive CAD. In light of the bidirectional relationships between pain, functional status, mental health, and quality of life among these patients, providers may feel underequipped to address these enmeshed treatment goals. Therefore, providing physicians with a practical guide to understanding, measuring, and treatment quality of life factors among patients with chest pain and no obstructive CAD is an objective with potential utility and clinical significance.

## Conclusion

Chest pain is a common symptom which occurs in people of all generations. It is the most common cause of emergency attendance in men, while women in second place immediately after stomach pain. Some of the causes of chest pain are banal and harmless, and go without treatment or with less intervention. On the other

hand, some of the most serious illnesses in medicine are presented just in the chest pains. Chest pain may indicate serious health problems, so it is advisable to immediately visit a physician who will set the diagnosis or refer the patient to further treatment.

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