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# Costochondritis and Tietze's Syndrome

**Costochondritis** describes an inflammation of costochondral junctions of ribs or chondrosternal joints of the anterior chest wall. It is sometimes called **Tietze's syndrome**, which is not in fact synonymous with costochondritis as it is distinguished from it by the presence of swelling over the affected joints. Tietze's syndrome is more localised, whereas costochondritis tends to be more diffuse. Both conditions may be considered to be subtypes of chest wall pain/syndrome. All describe musculoskeletal causes of chest pain.

The cause of costochondritis and Tietze's syndrome is unknown; however, preceding upper respiratory infections and excessive coughing have been described in some patients.

## Epidemiology<sup>[1, 2]</sup>

- Chest pain accounts for 1-2% of consultations in primary care, in which setting a cardiac cause is significantly less likely than in presentations to emergency departments<sup>[3]</sup>.
- In primary care costochondritis has been found to account for 13% of presentations with chest pain, and this may be more as chest wall pain accounts for 20% and much of this may be costochondritis<sup>[4]</sup>.
- Costochondritis is more common than Tietze's syndrome.
- Tietze's syndrome can present at any age but is most common in those under the age of 40 years. Costochondritis is more common over the age of 40 years.
- Both conditions occur in men and women, and in adults and children.
- In 70% of those with Tietze's syndrome, it is unilateral and only one joint is affected. More than one rib is likely to be affected by costochondritis.

## Presentation<sup>[1, 2]</sup>

- There may be acute or gradual onset. The patient complains of pain that is often localised to the costal cartilage (ie anteriorly on the chest wall). It may be described as aching, sharp or pressure.
- Tietze's syndrome usually affects the upper ribs, especially the second or third ribs. Costochondritis can affect any of the costochondral joints, but most commonly the second to the fifth ribs are affected.
- The pain is aggravated by physical activity, movement, deep inspiration, coughing or sneezing.
- There is commonly a history of recent illness with coughing, or recent strenuous exercise.
- There is localised tenderness. In Tietze's syndrome, there is a tender, fusiform swelling of the costal cartilage at the costochondral junction demonstrable on palpation.
- Although the pain usually disappears spontaneously, the swelling of Tietze's syndrome may persist long after the tenderness has disappeared.

## Differential diagnosis<sup>[3, 4]</sup>

The challenge is to distinguish from other causes of **chest pain** - for example:

- **Acute coronary syndrome** - radiation of pain to arm(s) or jaw, nausea, sweating, breathlessness.
- **Pericarditis** - pleuritic pain, pericardial rub, ECG changes.
- **Heart failure** - breathlessness, basal crepitations, elevated jugular venous pressure (JVP).
- **Pneumonia** - cough, fever, chest signs.
- **Pulmonary embolism (PE)** - pleuritic pain, breathlessness, tachypnoea, reduced oxygen saturation on pulse oximetry.
- **Thoracic aortic aneurysm dissection** - sudden tearing pain, blood pressure difference between arms.
- Rib fracture - history of trauma or coughing, tender to palpation, may be bruising.
- Chest wall pain - pain reproduced by palpation.
- Gastrointestinal causes of chest pain - eg, oesophagitis, **reflux**, **peptic ulceration**.

## Investigations

- Diagnosis can usually be made by careful history and examination.
- Investigations may be required to rule out other possible causes of chest pain:
  - ECG to exclude cardiovascular conditions; also where relevant troponin, coronary angiography, etc.
  - CXR to exclude other pathologies.
  - Ultrasound may have a role in assessment and diagnosis.
  - Magnetic resonance imaging (MRI) may also be useful for some patients<sup>[5]</sup>.

## Management<sup>[1, 2]</sup>

- Reassurance once the diagnosis is confirmed. The condition is benign and self-limiting.
- Non-steroidal anti-inflammatory drugs or paracetamol are usually all that is required for the pain.
- Local injection of long-acting corticosteroids may help.

- Intercostal nerve block may also help but is rarely required.
- Chiropractic treatment or physiotherapy may be beneficial in some cases.

## Prognosis<sup>[1, 2]</sup>

- Costochondritis: the course is variable but symptoms usually resolve within weeks to months, with symptoms resolved within a year in the majority.
- Tietze's syndrome: the pain usually subsides within a few weeks, with some residual swelling persisting for longer periods of time. However, the course of the disease varies from spontaneous remission to persistent symptoms over years.

## Further reading & references

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