

Evidence Discussion (CH-4.2)

Costochondritis/Other Musculoskeletal Chest Wall Syndrome

Costochondritis is a common cause of chest wall pain in adult patients presenting to the emergency department and physician's office.^{2, 3} It is defined as inflammation of costochondral junctions of ribs or costosternal joints, usually at multiple levels and without any swelling or induration.² It is a self-limited condition. The diagnosis is largely based on history and physical examination, which reproduces pain on palpation of the chest wall. Upper body movement, deep breathing, and exertional activities often exacerbate the pain.^{2, 3} Tietze syndrome presents similarly to costochondritis but includes visible edema at the involved joint(s), typically is unilateral involving the second rib, and is often incited by infection or trauma.³

There are no laboratory tests or imaging tests findings specifically for the diagnosis of costochondritis. If a patient relates a history of dyspnea or chest wall trauma, a chest radiograph or rib series may be indicated.³ Chest radiographs can help identify potential sources of previously undifferentiated chest pain such as pneumothorax, pneumomediastinum, fractured ribs, acute and chronic infections, and malignancies.¹ Most treatment recommendations are conservative in nature and have been traditionally accepted, perhaps because of the self-limited nature of the condition.^{2,3}

A large observational study found that 91% of patients with new-onset costochondritis had resolution of pain after three weeks of treatment with rest and nonsteroidal anti-inflammatory drugs. Recalcitrant cases may respond to corticosteroid injections.³

References:

1. Hoffmann U, Akers SR, Brown RK, et al. ACR Appropriateness Criteria[®] Acute Nonspecific Chest Pain-Low Probability of Coronary Artery Disease [published correction appears in J Am Coll Radiol. 2016 Feb;13(2):231]. *J Am Coll Radiol*. 2015;12(12 Pt A):1266-1271. doi:10.1016/j.jacr.2015.09.004
2. Proulx A, Zryd TW. Costochondritis: diagnosis and treatment. *Am Fam Physician*. 2009;80(6):617-620.
3. Mott T, Jones G, Roman K. Costochondritis: rapid evidence review. *Am Fam Physician*. 2021;104(1):73-78.