

## Little-Known Cause of Chest Pain: Tietze Syndrome Case Report

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Received: 25 March 2025, Accepted: 24 April 2025, Published online: 30 April 2025

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### Abstract

Tietze syndrome is a rare inflammatory disease that can be seen in all age groups and has characteristic features such as swelling, chest pain, tenderness and pain localized in the anterior chest wall, usually in the second or third costal region. The differential diagnosis includes many diseases that cause chest pain. Although the diagnosis is made by excluding other inflammatory pathologies and causes of chest pain, it usually does not require the use of additional diagnostic methods. Its etiology is not fully known, but heavy exercise and minor traumas are considered. Anti-inflammatory drugs and lifestyle changes are recommended in the treatment of Tietze syndrome. Surgical treatment can be applied for refractory cases, but it is generally not necessary. In this case, we report a 38-year-old female patient who presented with chest pain for 1 month, had normal laboratory values and the patient's pathologies were excluded. This case underscores the importance of clinical examination in diagnosing Tietze syndrome, avoiding unnecessary invasive tests.

**Key Words:** Tietze Syndrome, Chest pain, Costosternal

### Göğüs Ağrısının Az Bilinen Nedeni: Tietze Sendromu Olgu Sunumu

#### Özet

Tietze sendromu, her yaş gurubunda görülebilen genelde ikinci veya üçüncü kostasternal bölgede, şişlik, göğüs ağrısı, hassasiyet ve göğüs ön duvarında lokalize ağrı ile karakteristik özelliklere sahip nadir bir inflamatuvar hastalıktır. Ayırıcı tanısında birçok göğüs ağrısına neden olan hastalığı kapsamaktadır. Tanı, diğer enflamatuvar patolojilerin ve göğüs ağrısı nedenlerinin dışlanması ile konmakla beraber genellikle ek tanı yöntemlerinin kullanılmasını zorunlu kılmaz. Etiyolojisi tam olarak bilinmemekte fakat ağır egzersiz ve minör travmalar düşünülmektedir. Tietze sendromunun tedavisinde anti-inflamatuvar ilaçların kullanılması ve yaşam tarzı değişikliklerin uygulanması önerilir. Cerrahi tedavi refrakter olgular için uygulanabilmekle birlikte genellikle gerekli değildir. Bu olgumuzda 1 aydır göğüs ağrısı şikayeti ile başvuran, laboratuvar değerleri normal olan ve kardiyak patolojilerin ekarte edildiği 38 yaşında bayan hastayı bildiriyoruz. Bu vaka gereksiz invaziv testlerden kaçınarak Tietze sendromunun teşhisinde klinik muayenenin önemini vurgulamaktadır.

**Anahtar kelimeler:** Tietze sendromu, Göğüs ağrısı, Kostosternal

**Suggested Citation:** Uyanik E. Little-Known Cause of Chest Pain: Tietze Syndrome Case Report. ODU Med J, 2025;12(1): 19-23.

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### INTRODUCTION

The disease known as Tietze syndrome is a rare, non-suppurative inflammatory process characterised by chest pain and swelling at the costochondral junction (1). It is a painful but

benign condition, mostly unilateral in the second or third costosternal or costochondral joints. Its etiology is not fully known, but heavy exercise and minor traumas are considered. It is usually seen in the 2nd-3rd decade, but it can occur at any age. The symptoms of Tietze syndrome may begin suddenly or develop gradually. The patient's discomfort is usually positional. The severity of the pain may increase with movement of the arm and trunk, coughing, sneezing and deep breathing (2).

### CASE REPORT

A 38-year-old female patient who applied to the internal medicine clinic had been complaining of chest pain for the last 1 month. The patient had complaints of swelling and redness in the anterior chest wall. She described that it was aggravated by straining movements on the rib cage. The patient said that she had been doing heavy exercise at home approximately 1 week before the onset of her complaints and that she felt a strain on her rib cage during this time. She had no additional complaints such as fever, shortness of breath, palpitations or night sweats. No cardiac pathology was detected in the patient who applied to the cardiology department 15 days ago. There was no history of disease or medication use in the patient's medical history. Neck examination revealed redness, tenderness and a 1.5x1.5 cm moderately hard swelling in the left costosternal joint. There was no crepitation

or deformity on palpation. Cardiovascular, respiratory, and musculoskeletal examinations were unremarkable. No pain, tenderness or mass was found in the neck, chest, arm, leg, hand or foot joints.

In laboratory tests, routine biochemistry and hemogram were normal. The erythrocyte sedimentation rate (ESR) was 28 mm/hour and the c-reactive protein (CRP) was slightly elevated at 12 mg/dl. Rheumatoid factor and anti-nuclear antibodies were tested for the differential diagnosis of rheumatoid arthritis and other seropositive inflammatory arthritis, and both were found to be negative. The electrocardiography performed on the patient, which showed natural and sinus rhythm. The superficial USG performed on the patient, thickening of the cartilage tissue in the left 2nd costosternal joint, signs of inflammation, and edema were detected. Based on clinical findings and tests, the patient was diagnosed with Tietze syndrome. The patient was started on oral nonsteroidal antiinflammatory drugs, and topical gel treatment. It was recommended to stay away from activities could cause trigger pain. When the patient came for a follow-up visit after 2 weeks of treatment, he stated that the pain and swelling had decreased significantly. On physical examination tenderness and swelling had regressed. One month later, it was determined that his

complaints had completely disappeared and his physical examination was completely normal.

## DISCUSSION

Tietze Syndrome was first described in 1921 by the German surgeon Alexander Tietze (3). The exact aetiology is unknown, it is rarely encountered. Although its exact etiology is not known, it is thought that recurrent microtraumas may cause small tears in the sternocostal ligaments and paving the way for the disease. It is more frequently detected in women and in people under the age of 40, but it can be seen in all age groups (4). In a retrospective study of 24 patients from our country, the mean age was reported as 21.2 (5). Our patient was 38 years old, which is in consistency with the literature.

Patients usually present with complaints of acute chest pain without a history of trauma. Individuals usually feel the pain more acutely during movement and position changes, coughing, sneezing, and deep breathing. The pain may radiate to the neck, arms, and shoulders.

It is usually unilateral (70%) and involves the 2nd-3rd costosternal joints. Sternoclavicular joint involvement has been detected rarely (6). In our case, there was only left costosternal joint was involved. During the periods when the patient's complaints increase, high fever and CRP and ESH values can be detected (2). At the time of our patient's admission, CRP and ESH

values were slightly elevated, but there was no fever.

USG imaging is one of the most common evaluation methods showing soft tissue swelling in the area of the ongoing inflammatory process. In a study, a case of Tietze Syndrome, which was diagnosed by USG imaging and treated with USG-guided corticosteroid injection, was presented, emphasising the importance of USG imaging in diagnosis and treatment (7). In our case, we performed USG imaging because it is reliable in soft tissue diagnosis and does not involve radiation, and we obtained results by identifying inflammatory findings.

Tietze syndrome can resemble cardiac, pulmonary, neurological and intra-abdominal pathologies due to the variety of its symptoms and should therefore be carefully evaluated in the differential diagnosis of patients with abdominal and chest pain (8). In addition, rheumatoid arthritis (RA), gout, pyogenic infections, neoplastic processes and chest wall pain syndromes such as costochondritis and sternal syndrome, which may involve the costosternal joints, are important clinical conditions that should be considered in the differential diagnosis.

Treatment is usually with oral or local nonsteroidal anti-inflammatory and analgesic drugs. However, in rare cases, additional

treatment protocols should be applied to the patients. Surgery may be considered in cases that do not respond to conventional treatment. In chronic cases, intercostal nerve blocks can be used successfully, but the possibility of recurrence has been reported frequently (9). In a study conducted by Şentürk E. et al., nonsteroidal anti-inflammatory drugs (NSAIDs) were compared with prolotherapy. The findings revealed that patients who received prolotherapy showed a faster recovery process compared to patients who used NSAIDs. The researchers emphasised that prolotherapy can be an effective treatment alternative in cases where other treatment approaches are not suitable (10). In our patient, one month of oral non-steroidal anti-inflammatory and local analgesic treatment was sufficient for the patient's symptoms and physical examination to improve completely.

## CONCLUSION

Although rare, Tietze syndrome should be considered in localized chest pain to reduce diagnostic delays and unnecessary interventions. However, a detailed history and physical examination are important in patients presenting with chest pain to exclude life-threatening diseases, Tietze syndrome is a disease that should be kept in mind in differential diagnosis. It is important for doctors to recognise this benign syndrome in order to minimise the patient's physical distress, the psychological effects of the

disease, time loss and costs.

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