Letters to the Editors

When chest pain is not "just" Tietze's syndrome: a case of non-Hodgkin's lymphoma

Sirs,

Tietze's syndrome (TS) is a rare disorder of unknown aetiology characterised by painful and non-suppurative swelling at costochondral, chondrosternal or sternoclavicular joints (1). The diagnosis of TS requires ruling out a wide spectrum of cardiopulmonary, inflammatory, neoplastic and infectious conditions (2-3). Imaging techniques (i.e. CT, MRI and US) play a relevant role in the diagnosis of TS and in the exclusion of other conditions that may affect the anterior chest wall (4-6). However, there are only few studies on the value of each imaging techniques and which should be the first-line choice is still a matter of debate (7). Herein, we describe the case of a non-Hodgkin's lymphoma in a 26-year-old woman who was initially diagnosed with TS.

In December 2017, she developed a painful, tender and rapidly enlarging parasternal swelling, localised at the left 2nd costochondral joint. At that time, other symptoms included dry cough, general malaise and anterior chest pain exacerbated by movement and breathing. She reported no history of recent trauma or infections.

Initially, she was diagnosed with TS and treated with ibuprofen (1800 mg/day) with no benefit. In January 2018, she was admitted to our Department due the persistence of the abovementioned symptoms and the worsening of the general condition. The physical examination revealed a left parasternal hard, fixed and tender swelling. Daily low-grade nocturnal fever was registered. Laboratory exams showed raised CRP (2.5 mg/dl, n.v.<0.5 mg/ dl) and ESR (29 mm/h, n.v.<15 mm/h). Blood test culture and serological tests for fungal and bacterial infections resulted negative.

US revealed an inhomogeneously hypoechoic, ill-defined area, deep to the pectoral muscle with sternal cortical bone erosions and power-Doppler signal (Fig. 1).

The chest CT-scan with contrast detected a large and inhomogeneous soft-tissue mass with a necrotic centre and a peripheral postcontrast enhancement both in early and late arterial phases. The lesion extended from the 1st and 2nd left chondrosternal joints posteriorly to soft tissues of the superior-anterior mediastinum and anteriorly to chest wall muscles, with multiple sternal erosions (Fig. 1). No lung or mediastinal involvement, nor axillary and supraclavicular lymphadenopathies were detectable. Biopsy showed isles of large atypical lymphocytes and Reed-Sternberg-like cells and areas of necrosis. Fluorodeoxyglucosepositron emission tomography (FDG-PET)/ CT scan revealed an area of increased metabolic activity in the left parasternal region without evidence of disseminated disease. The final diagnosis was stage I-E extra-nodal diffuse large B-cell lymphoma. The patient was successfully treated with chemotherapy consisting of rituximab, cyclophosphamide, doxorubicin, vincristine and prednisone.

The diagnosis of TS is traditionally based on clinical findings. In this case, the following



Fig. 1. Sonographic and CT appearance of an extra-nodal non-Hodgkin lymphoma.

A-B: GS-PD US transverse scan of the left sternal region. Figure A shows an inhomogeneously hypoechoic, ill-defined area, deep to the pectoral muscle (asterisks) with sternal cortical bone erosions (arrows). Figure B shows diffuse PD signal (red spots) within the area and inside sternal bone erosions (arrows). **C-D:** chest CT-scan after (C) and before (D) intravenous iodinated contrast administration. Large and inhomogeneous area with a necrotic centre (squares), with peripheral post-contrast enhancement and multiple bone erosion (arrows) at the sternum.

Arrows: bone erosions; asterisks: pectoral muscle; GS: grey scale; PD: power Doppler; R: rib; S: sternum, squares: hypodense non-enhancing areas; US: ultrasound.

features induced us to take into account alternative possibilities to the initial diagnosis:

- the fast growth of the left parasternal mass;
- the rapid worsening of the patient's general condition and the presence of systemic symptoms;
- the failure of the first-line treatment with non-steroidal anti-inflammatory drugs;
- the US findings indicative of a potentially aggressive process.

US played a key role in demonstrating the aggressive features of the disease, prompting further investigation that allowed us to confirm the diagnosis of lymphoma.

Only few reports of lymphoma mimicking TS have been published (8-10). Interestingly, in all the reported cases, laboratory and imaging findings were within the normal limits in the early stage.

In conclusion, TS is too often a "wastebasket diagnosis" that is made in the clinical scenario of a painful swelling of the parasternal region. A comprehensive diagnostic work-up and a close follow-up are mandatory to avoid misdiagnosis. As shown in this case report, a contextual clinical and sonographic examination may play a key role in narrowing the differential diagnosis of anterior chest wall pain of unknown origin.

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