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Case Report

Case report: Primary bone lymphoma presenting as a painful supraclavicular lump ☆

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ABSTRACT

Primary bone lymphoma is a rare type of non-Hodgkin's lymphoma. It commonly arises from long bones such as the femur in the appendicular skeleton. The authors present a case of primary bone lymphoma of the clavicle, an uncommon location for this pathology, presenting as a painful supraclavicular lump in a 76-year-old woman. Magnetic resonance imaging and ultrasound examinations showed the typical feature of preservation of the bony cortex, and PET-CT revealed no alternative primary site of malignancy. This case highlights the importance of considering typical imaging characteristics of a lesion, even if it presents in an unusual site, as well as the value of completion imaging in clinical practice to secure a diagnosis.

Introduction

Primary bone lymphoma, a rare type of non-Hodgkin's lymphoma, makes up approximately 5% of malignant bone tumors. Most cases are diffuse large B-cell lymphoma [1]. It can be a mono-ostotic (as in this case) or a polyostotic disease with or without lymph node involvement [2]. It most commonly presents in patients in their 50s-60s and has a slight male predilection.

The most frequent sites of occurrence are long bones in the appendicular skeleton, particularly the femur. Presentation is usually with insidious bone pain and B symptoms such as fever, night sweats, and weight loss [3]. We present a case of primary bone lymphoma in a relatively rare location, the clavicle.

Case report

A 76-year-old woman presented with a painful palpable lump overlying her right clavicle, which had gradually appeared over the course of 2 months. There was no history of preced-

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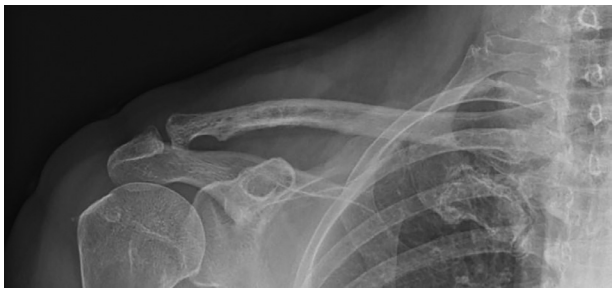

Fig. 1 – AP radiograph right clavicle.

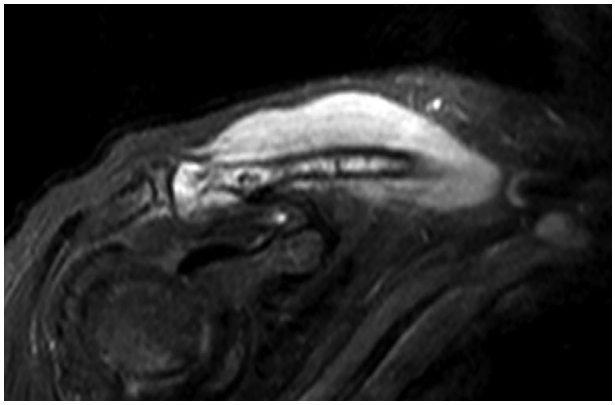

Fig. 2 – MRI clavicle STIR.

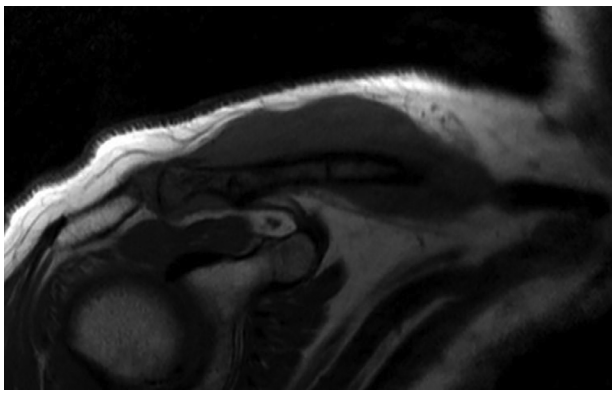

Fig. 3 – MRI clavicle T1.

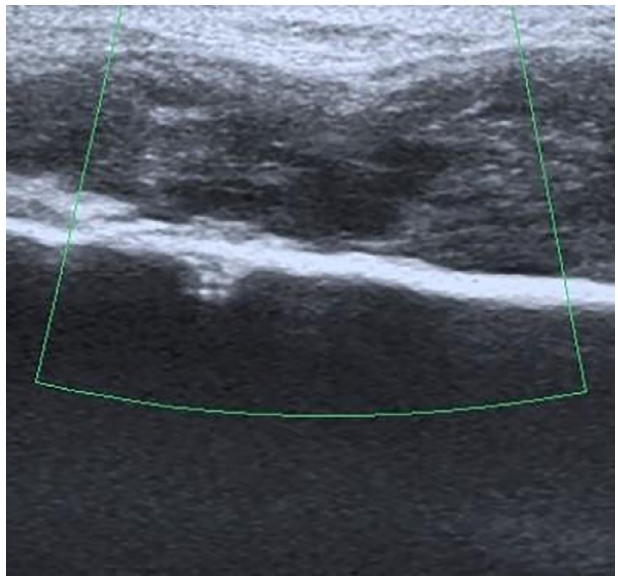

Fig. 4 – Ultrasound right clavicle with Doppler.

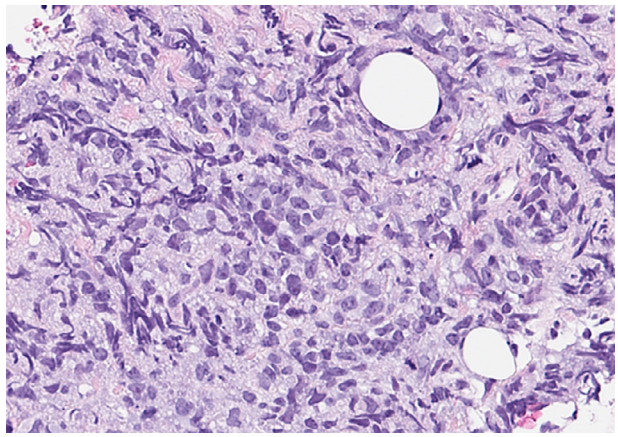

Fig. 5 – Histopathology slide biopsy.

ing trauma and she was otherwise fit and well with no history of malignancy. She reported no other relevant clinical symptoms. On examination, a hard lump measuring approximately 5 cm was palpable in the right supraclavicular region. Inflammatory markers and biochemical bone profile were normal.

Radiographs showed a permeative lesion in the clavicular diaphysis (Fig. 1). Magnetic resonance imaging (MRI) showed high STIR signal (Fig. 2) in this region, with low T1 signal replacing the normal fatty marrow (Fig. 3), and an associated soft tissue mass. Both MRI and ultrasound examination showed preservation of the bony cortex, with ultrasound Doppler imaging showing no neovascularization (Fig. 4). There was generalized enhancement of the lesion following contrast administration on MRI.

The diagnosis of lymphoma was confirmed on ultrasound-guided percutaneous biopsy, which showed diffuse infiltration of sheets of mononuclear lymphoid blasts (Fig. 5). To exclude secondary osseous lymphoma, a PET-CT (Fig. 6) was performed to investigate for an alternative primary malignant source [5]. In this case, the only other PET-avid region identified was in the maxillary sinus, felt most likely to be inflammatory in nature. With no other feasible site of primary malignancy identified, the diagnosis of primary bone lymphoma was made. A complete response was then seen on subsequent PET-CT following treatment.

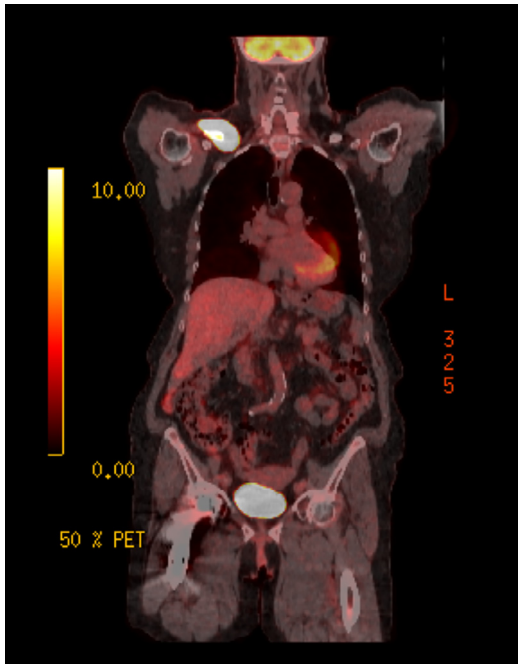

Fig. 6 – PET CT.

Discussion

Primary bone lymphoma is rare in itself, and the clavicle is a rare location for it, with this disease more commonly arising from the femur or other long bones in the appendicular skeleton. On radiographs, it commonly appears as a permeative or lytic lesion with a layered periosteal reaction, though in some cases plain films may be completely normal. Ultrasound and MRI will frequently demonstrate a soft tissue mass. Marrow changes are apparent on MRI, with low-T1/ high T2 signal areas commonly observed, though low T2 signal may be demonstrated in the context of fibrosis within the lesion [4]. High signal is often seen on STIR sequences and enhancing areas on postcontrast images. Typically in primary bone lymphoma there is relatively little cortical destruction, as demonstrated in this case [1].

The prognosis of primary bone lymphoma is generally better than most other skeletal malignancies. A combination of chemotherapy with radiotherapy is usually utilized for treatment, with a 5-year survival rate reported as between 80% and 90% [1,2].

Differentials for the imaging appearances in this case include metastasis, which may also have a permeative appearance on radiographs and associated soft tissue mass, or plasmacytoma, which should be considered in the context of a solitary bone lesion [3]. SAPHO may present with clavicular pain, but more commonly affects the sternoclavicular joint. Osteosarcoma could also possibly produce similar radiographic appearances and marrow changes on MRI. However, these pathologies typically demonstrate cortical changes such as thinning or destruction, whereas notably the cortex is preserved in this case [4]. This case highlights the importance of considering typical imaging characteristics of a lesion, even if it presents in an unusual site, as well as the value of completion imaging in clinical practice to secure a diagnosis.

Patient consent statement

This is a statement confirming that written, informed consent for publication of their case was obtained from the patient.

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