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Case Report

Soft tissue swellings in the foot: Rheumatoid nodulosis

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ABSTRACT

Background rheumatoid nodulosis is a rare disease characterised by multiple subcutaneous nodules, a high titre of rheumatoid factor, radiologically detectable cystic bone lesions, but with none or few of the systemic manifestations or joint activity of rheumatoid disease. Histopathologically, nodulosis is the same as the nodules found in rheumatoid arthritis. It is considered to be a benign variant of rheumatoid arthritis. A 69 year old male presents with multiple subcutaneous nodules on the feet. This case study highlights the benefits of ultrasound in establishing a correct diagnosis and management. Although rare, rheumatoid nodulosis is a consideration in the differential diagnoses of soft tissue swellings in the feet.

1. Introduction

The term "rheumatoid nodulosis" was first used by Ginsberg in 1975 to describe a rare form of rheumatoid disease [1]. He describes adult patients with little or no clinical joint inflammation but with numerous subcutaneous nodules which, from histopathology examination, are indistinguishable from sero-positive rheumatoid disease [2]. Classically the course of rheumatoid nodulosis is benign, with minimal functional impairment [1]. Occurrence in the feet is rare and only sparsely reported in the literature. This is a case report of rheumatoid nodulosis presenting in the feet of a 69 year old male, with a high titre of anti-cyclic citrullinated (CCP) antibodies but devoid of clinical signs of rheumatoid disease. The use of ultrasound images was key to diagnosis and correct management.

2. Case report

A 69 year old man presented with multiple nodular soft tissue swellings on the plantar aspect of both feet and posterior aspect of both heels. The nodules had been present for many months and were slowly getting bigger but gave rise to only minor discomfort. There was no history of any trauma and he was in good health with no significant medical history. He denied any joint pain or swelling and he was unaware of any swellings elsewhere.

3. Physical examination

Examination revealed symmetrical swellings on the plantar aspect of both 1st and 5th metatarsophalangeal (MTP) joints and the posterior aspect of his heels. The swellings had a partial erythema, with a mottled appearance on the 1st and 5th MTP of both feet (see Fig. 1 below). The swellings were non-tender, soft, compressible, bulky lesions with firmer smaller nodules contained within. Locomotor examination was unremarkable.

3.1. Confirmatory tests

Radiographs identified an incidental fracture of the 5th metatarsal of the right foot otherwise nothing abnormal was detected (see Fig. 2).

4. Serology results

Serological testing demonstrated a high level of anti-cyclic citrullinated antibodies (CCP) (50.0 μ/ml [ref 0–3.0 μ/ml]). These antibodies have been reported to be as sensitive but more specific than rheumatoid factor in the diagnosis of rheumatoid arthritis,

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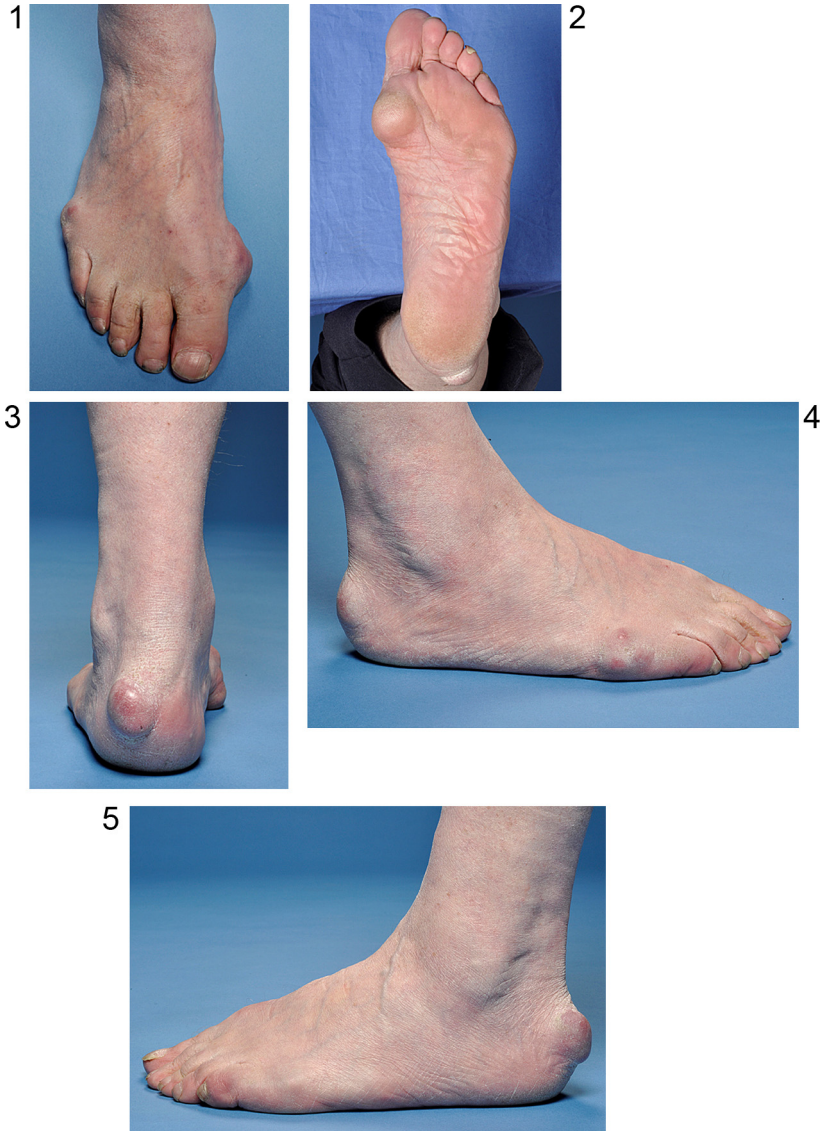

Fig. 1. Swellings of the feet.

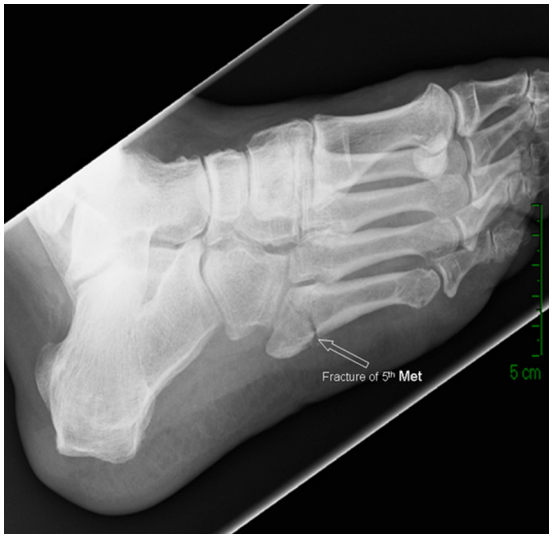

Fig. 2. Radiographs demonstrated an incidental asymptomatic fracture of the 5th metatarsal of the right foot but there was no evidence of joint erosions.

with CCP sensitivity of 70–80% and a specificity of 95–98%. It has been reported that CCP and rheumatoid factor may be present 10 years before the onset of articular symptoms [3]. Patients with anti-CCP antibodies have been identified as being 10.2 times more likely to develop erosions than those who were CCP negative [4]. This is an important factor that warrants monitoring to ensure appropriate treatment is offered at the relevant time. However CCP antibodies are less strongly associated with nodules than rheumatoid factor [4]. Serological investigations indicated no evidence for diabetes, viral or infectious aetiologies. Alkaline phosphate, white blood cell count, erythrocyte sedimentation rate, and C-reactive protein were all within normal limits. Serology did not support a clinical suspicion of gout.

5. Ultrasound findings

Ultrasound images were captured using Siemens, Acuson Antares and Esaote, Mylab ultrasound machines and a linear 6–18 MHz transducer (see Fig. 3).

The swellings at the 1st MTP joints, at the lateral aspect of the 5th MTP joints and at both heels appear solid and non-compressible.