Nodular rheumatoid arthritis resembling gout

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Accepted 12 August 2016

DESCRIPTION

A 57-year-old man presented for review in the rheumatology outpatients clinic. He had a 30-year history of rheumatoid arthritis and was known to be positive for rheumatoid factor and anticitrullinated protein antibodies (anti-CCP antibodies). He had been treated over the past 30 years with various immunosuppression regimens, including long-term methotrexate, leflunomide and sulfasalazine. His disease had been stable for the past 2 years with no recent increase in nodules or episodes of acute synovitis. Several times in the past 15 years his diagnosis of rheumatoid arthritis had come into question due to the atypical appearance of his hands which closely resembled gout (figures 1 and 2). On two occasions, excision of rheumatoid nodules was sent for histology to exclude other diagnoses such as gout and multicentric reticulohistiocytosis. In both specimens, there was no evidence of birefringent urate crystals when exposed to polarised light. While reticulohistiocytosis also shows a proliferation of histiocytes, they are typically nodular and scattered. The characteristic pattern of palling histiocytes was consistent with rheumatoid nodules (figure 3).

Nodular rheumatoid arthritis can mimic a variety of conditions presenting with subcutaneous nodules, including gout, pseudogout, multicentric reticulohistiocytosis, tumorous calcosinosis, subcutaneous granulomas, traumatic fibromas, xanthomas, cysts and basal cell carcinoma.¹ A positive rheumatoid factor and the presence of anti-CCP antibodies strongly support the diagnosis of nodular rheumatoid arthritis when the diagnosis is in question. If there is persisting diagnostic uncertainty, an excised

nodule can be identified histologically. Rheumatoid nodules have a consistent histological appearance defined by a central area of fibrinoid necrosis surrounded by palisading CD68+ macrophages enclosed by a granulation layer² (figure 3).

Treatments of nodular rheumatoid arthritis include glucocorticoid injections to symptomatic nodules and managing rheumatoid arthritis with disease-modifying antirheumatic drugs (DMARDs) and biological agents such as etanercept and infliximab.² Interestingly, methotrexate and several other DMARDs have been linked to accelerated nodulosis in some patients with rheumatoid nodules.^{1 2} Additionally, antitumour necrosis factor agents such as etanercept have been implicated in cases of accelerated nodulosis¹⁻³ and the development of new pulmonary nodules.^{2 3}

In patients with accelerated nodulosis, it is important to consider cessation of methotrexate or other suspected medication and use an alternative if clinically feasible. It is reported that the addition of colchicine, sulfasalazine, hydroxychloroquine or d-penicillamine may reduce nodulosis even when methotrexate has been continued.¹ Interestingly, rituximab has been shown to improve pulmonary nodulosis and in one case has led to subcutaneous nodule regression in a patient with etanercept-associated subcutaneous nodulosis.^{3 4}

Correct identification and diagnosis of nodular rheumatoid arthritis is important so that disease-specific treatment and ongoing surveillance can occur. This case highlights that nodular rheumatoid arthritis of the hands may have an appearance similar to gout, and if diagnosis is in question, rheumatoid serology and nodule histology can resolve any diagnostic uncertainty.

Figure 1 Dorsum of hands showing multiple rheumatoid nodules involving the proximal and distal interphalangeal joints and metacarpophalangeal joints. These nodules take on an appearance not dissimilar to gout.

To cite: Chakradeo K, Buzacott K, Soden M. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2016-216967

Figure 2 Palmar aspect of hands showing multiple rheumatoid nodules which are shown to have a relative symmetrical appearance.

Figure 3 (A) H&E section (low power) of nodule showing characteristic geographical necrosis comprised multiple red granulomas (arrows). (B) H&E section (high power) of red granuloma showing a rim of palisading histiocytes (arrows) surrounding the necrobiotic centre containing abundant pink fibrin and nuclear debris (arrowheads). No crystals or birefringent material was identified.

Learning points

- ▶ Nodular rheumatoid arthritis can mimic a number of other conditions, including gout.
- ▶ The presence of rheumatoid factor or anticitrullinated protein antibodies can support the diagnosis of nodular rheumatoid arthritis while nodule histological examination is confirmatory in cases of clinical uncertainty.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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