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Difficult to treat rheumatoid arthritis: Why profound differential diagnosis is important

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1. Case presentation

A 47-year-old patient was referred to our rheumatology department due to treatment refractory rheumatoid arthritis, characterized by polyarthralgia, progressive joint destruction, and impaired functionality despite treatment with multiple disease modifying antirheumatic drugs (DMARDs). Notably, the patient had previously undergone bilateral ankle joint replacement believed to be due to postarthritic osteoarthritis. Clinical and ultrasound examination showed persistent active arthritis in the left carpus, left elbow, and knees despite DMARD combination therapy. Additionally, the patient appeared very tanned for this time of year (in Germany).

Laboratory results, including inflammation markers, complete blood count, and renal function parameters, were within normal ranges. However, transaminase levels were elevated. Of particular interest, serum ferritin was markedly increased, with a transferrin saturation of 62 %. Rheumatoid factor levels were high, while cyclic citrullinated peptide (CCP) antibodies were negative. Anti nuclear antigens (ANA) and anti neutrophil cytoplasmic antibodies (ANCA) were found to be negative. Moreover, the patient was tested HLA-B27 negative.

Radiographic assessment of the hand and knee joints revealed characteristic changes (see Fig. 1).

2. Discussion

Based on the characteristic bilateral hook-shaped osteophyte formation at metacarpophalangeal joints 2 and 3, as well as at the lateral knee joint space, and the significantly elevated serum ferritin and transferrin saturation, the patient was testedfor a C282Y mutation in the HFE gene. The diagnosis of hemochromatosis was confirmed by identification of a homozygous mutation. Subsequently, a series of phlebotomies were conducted until serum ferritin decreased to below 50 mg/dL. This therapeutic intervention was successfully carried out without causing significant anemia. As a result of this treatment, the initially elevated transaminase levels gradually returned to normal values. The patient did not have diabetes mellitus or cardiomyopathy. We considered the present oligoarthritis as associated with hemochromatosis despite the presence of rheumatoid factors.

Arthropathy is frequent in hemochromatosis and manifests mainly in the hands, hips, knees and ankle joints [1]. We considered the reason for bilateral ankle replacement due to untreated hemochromatosis. Unfortunately, in this case the patient reported arthralgias showed only partial improvement under normalization of serum ferritin similar to those reported in the literature [2]. Due to the failure of the classic DMARDs and the diagnostic revision, further symptomatic treatment with non-steroidal anti-inflammatory drugs (NSAIDs), prednisolone and low-dose colchicine was carried out in line with the available evidence for the treatment of arthralgia/arthritis in hemochromatosis [3].

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Availability of data and materials

The data are available upon reasonable request from the corresponding author.

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Fig. 1. X-ray of the hands and right knee joint.

Declaration of competing interest

The Authors declare that there is no conflict of interest.

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