Multiple nodules on the bilateral aspect of the upper extremities

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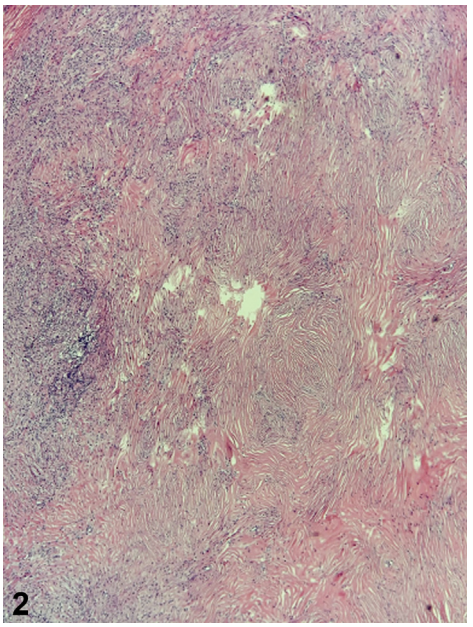

CASE REPORT

A 55-year-old man with a history of limited discoid lupus presented to the dermatologist with a complaint of enlarging tender nodules present for roughly 20 years on the bilateral aspect of the hands, forearms, and elbows. He reported previous treatment with hydroxychloroquine, without an improvement in the nodules. No drainage, other areas of involvement, or contact with similar lesions was noted. He denied a past medical history of arthritis or recurrent painful joints. Firm hyperpigmented nodules were noted on examination (Fig 1).

A shave biopsy was obtained and submitted for hematoxylin-eosin staining, as shown in Fig 2.

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Question 1: What is the most likely diagnosis?

A. Rheumatoid nodules

B. Erythema elevatum diutinum (EED)

C. Multicentric reticulohistiocytosis

D. Tuberous xanthomas

E. Enchondromas

Answers:

A. Rheumatoid nodules — Incorrect. Although the nodule distribution and clinical findings in this patient are similar to those of rheumatoid nodules, rheumatoid nodules are associated with rheumatoid arthritis. This patient had no history of arthralgias or joint stiffness; therefore, he is less likely to have rheumatoid arthritis.

B. Erythema elevatum diutinum (EED) — Correct. EED is a type of chronic leukocytoclastic vasculitis that presents most frequently with bilateral, symmetric, periarticular nodules on the dorsal aspect of the upper extremities. Although its etiology is unclear, it has been shown to be associated with malignancies, infections (HIV and hepatitis), and autoimmune connective tissue diseases.[1,2]

C. Multicentric reticulohistiocytosis — Incorrect. This condition is associated with destructive arthropathy, which would have been evident by this point in this patient's lengthy course. The lesions tend to be skin-colored, pink, red-brown, or yellow and range up to 2 cm in diameter on the head, hands, ears, and joints. Small coalescing papules can create a "coral bead" appearance in the periungual region. The chronicity of this patient's disease and the lack of destructive arthropathy make this diagnosis unlikely.

D. Tuberous xanthomas — Incorrect. Tuberous xanthomas are skin-colored papules and nodules that favor the elbows and knees and develop in association with disorders of lipid metabolism. Their diagnosis can be made clinically, but additional testing is definitive. Tuberous xanthomas are usually painless, unlike the painful nodules in this case.

E. Enchondromas — Incorrect. Enchondromas are benign cartilage-producing tumors that develop in long bones, particularly those of the hand. Multiple enchondromas are associated with Maffucci syndrome and Ollier disease, which present most commonly in childhood or adolescence, unlike the presentation in adulthood seen in this case.

Question 2: What is the most characteristic feature of this disease observed with hematoxylin-eosin staining?

A. Neutrophilic inflammation with fibrinoid necrosis of vessel walls

B. Central zone of brightly eosinophilic fibrin surrounded by a palisaded layer of histiocytes and granulation tissue

C. Multiple foamy cells with cholesterol clefting

D. Large, fissured, pale pink, amorphous material in superficial and deep dermis

E. Circumscribed nodule staining positively for colloidal iron

Answers:

A. Neutrophilic inflammation with fibrinoid necrosis of vessel walls — Correct. Histologically, EED is characterized by leukocytoclastic vasculitis, which can chronically lead to fibrosis. Older lesions, such as those seen in this patient, tend to be more fibrotic. This fibrosis may display a storiform or concentric appearance, and progression of the lesion is hypothesized to be due to continued foci of leukocytoclastic vasculitis.[3,4]

B. Central zone of brightly eosinophilic fibrin surrounded by a palisaded layer of histiocytes and granulation tissue — Incorrect. This histology is characteristic of rheumatoid nodules.

C. Multiple foamy cells with cholesterol clefting — Incorrect. This histology describes that seen in tuberous xanthomas.

D. Large, fissured, pale pink, amorphous material in superficial and deep dermis — Incorrect. This histology describes that seen in nodular amyloid.

E. Circumscribed nodule staining positively for colloidal iron — Incorrect. This histology describes that seen in a digital mucous cyst.

Question 3: What is the best initial treatment for this diagnosis?

A. Intralesional bleomycin

B. Simvastatin

C. Orthopedic referral and excision

D. Dapsone

E. Allopurinol

F. Initiation of highly active antiretroviral therapy

Answers:

A. Intralesional bleomycin — Incorrect. Intralesional bleomycin can be used for the treatment of treatment-resistant viral warts. This medication is an antibiotic derived from the fungus *Streptomyces* and has not been shown to be useful in the treatment of EED.

B. Simvastatin — Incorrect. Simvastatin is a 3-hydroxy-3-methyl-glutaryl-CoA reductase inhibitor and lipid-lowering agent. It has been part of the treatment of an underlying dysbetalipoproteinemia found in an individual with tuberous and tendinous xanthomas. It is not expected to help treat the lesions of EED.

C. Orthopedic referral and excision — Incorrect. Excision is a second- or third-line treatment for the lesions of EED that do not respond well to initial therapy or for patients who are not good candidates for medical therapy.[2,3,5]

D. Dapsone — Correct. Dapsone is an antileprotic agent that inhibits myeloperoxidase, thereby limiting the damage incurred to normal tissue in neutrophilic dermatoses. It has been shown to be helpful in resolving lesions in patients with EED. Individuals should be screened for glucose-6-phosphate dehydrogenase deficiency as these patients have a higher risk of hematologic adverse effects.[4] The other treatment options include intralesional corticosteroids, nonsteroidal anti-inflammatory drugs, colchicine, tetracyclines, and chloroquine.[3]

E. Allopurinol — Incorrect. Allopurinol inhibits xanthine oxidase, which is the enzyme responsible for the conversion of hypoxanthine to uric acid. It reduces the production of uric acid in the treatment of gout. It is not used in the treatment of EED.

F. Initiation of highly active antiretroviral therapy — Incorrect. EED has been shown to be associated with HIV infection, hepatitis infections, monoclonal gammopathies, and autoimmune diseases, and a thorough history and physical examination with appropriate testing should be done as part of a complete workup.[1-4] However, treatment for suspected HIV should not be initiated without further laboratory investigations.

Abbreviation used:

EED: erythema elevatum diutinum

Conflicts of interest

None disclosed.

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