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CASE FOR DIAGNOSIS

Ulcerated Nodules on the Posterior Aspect of the Legs

Nódulos ulcerados en la cara posterior de las piernas

Clinical History

The patient was a woman aged 31 years with congenital spina bifida, wheelchair-user, kidney transplant 8 years previously. She was referred to the dermatology department for several asymptomatic lesions that had developed on the posterior aspect of the legs 5 months earlier. She was on treatment with cyclosporine, azathioprine, prednisone, furosemide, calcitriol, and iron, all administered orally, and subcutaneous darbepoetin alfa. The patient reported no change her drug treatment in the previous year. Her general health was good, and she had no fever or other accompanying signs or symptoms.

Physical Examination

Physical examination revealed several confluent, indurated subcutaneous nodular lesions with peripheral scaling on the posterior aspect of both legs. Some of the lesions had ulcerated and discharged a whitish material (Figure 1). No other relevant lesions were observed during the exhaustive dermatological examination, nor were there any signs of arthritis.

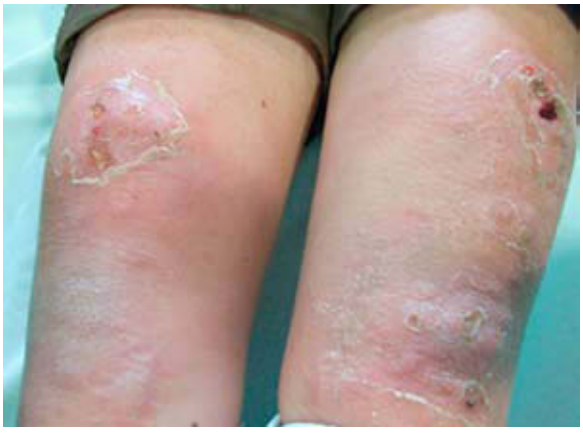

Figure 1 Ulcerated nodular lesions discharging a whitish material, situated on the posterior aspect of the legs.

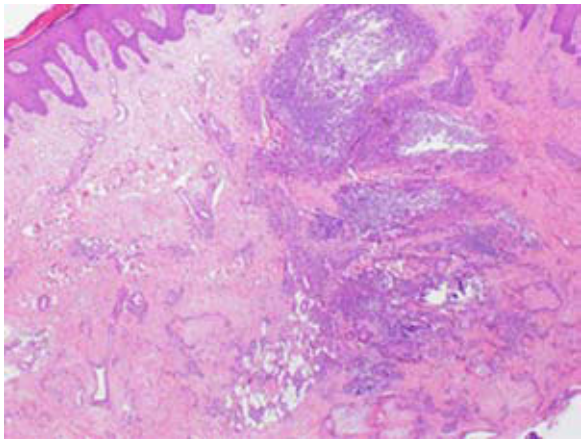

Figure 2 Inflammatory infiltrate in the papillary and reticular dermis with deposits of amorphous material. (Hematoxylin-eosin, ×10).

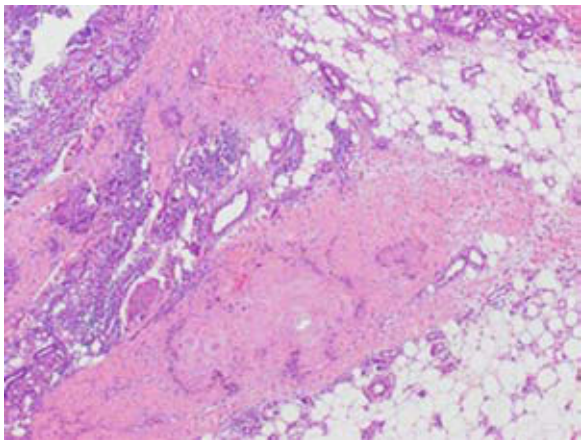

Figure 3 Amorphous, acellular, eosinophilic material in the hypodermis, surrounded by an inflammatory infiltrate of lymphocytes, macrophages, and giant cells. (Hematoxylin-eosin, ×25).

What Is Your Diagnosis?

Additional Tests

Two biopsies were taken from the lesions, one for conventional histology and the other for a microbiological culture. Hematoxylin-eosin staining revealed an inflammatory infiltrate in the papillary dermis and numerous deposits of amorphous, acellular, and eosinophilic material in the reticular dermis and hypodermis, surrounded by a granulomatous reaction with macrophages, lymphocytes, and giant cells (Figures 2 and 3). There was no evidence of vasculitis or intraluminal thrombosis. Periodic acid-Schiff, Grocott, and Von Kossa stains were negative, as was the tissue culture. Polarized light microscopy of the exudate from one of the ulcerated lesions showed acicular crystals with negative birefraction. Blood tests revealed the following abnormalities: urea, 142.5 mg/dL (10–50 mg/dL); uric acid, 11.35 mg/dL (2.4–7 mg/dL); creatinine, 1.93 mg/dL (0.5–1.1 mg/dL); C reactive protein, 92.9 mg/mL (0–5 mg/mL); parathormone, 365 pg/mL (20–64 pg/mL); and erythrocyte sedimentation rate 30 mm/h (0–15 mm/h). The remaining biochemical parameters, including calcium and pancreatic enzymes, and hematological parameters were normal. Protein electrophoresis, immunoglobins, and complement showed no abnormalities. Angiotensin converting enzyme and α-1 antitrypsin were within normal limits, as were the levels of rheumatoid factor and antistreptolysin O (ASO) antibodies. Immunological study including antinuclear antibodies (ANA and anti-DNA) and anti-neutrophil cytoplasmic antibodies (ANCA) showed no abnormalities. Serology for hepatitis B and C viruses, human immunodeficiency virus (HIV), and *Yersinia* were negative.

Diagnosis

Gouty panniculitis.

Clinical Course and Treatment

The patient began treatment with allopurinol at a dose of 100 mg/d, and a slow but favorable improvement was observed in the lesions. At the last revision, 4 months ago, residual depressed hyperpigmented lesions were observed.

Comment

Gout can have various dermatological manifestations; the most common and well-known of which are tophi. In these lesions, deposits of urate crystals are observed in the dermis, cartilage, and synovial sheaths. Gouty panniculitis, characterized by the deposition of crystals and amorphous material in subcutaneous cellular tissue is uncommon, and we have found fewer than 10 cases published.[1-7]

However, panniculitis has been described as the first manifestation of gout,[1,2] as is the case in our patient. Most cases present hyperuricemia,[1-4] though this is not always the case.[5] Review of previous cases shows the lesions can be either painful[1-3,5] or painless.[4] Our patient described the lesions as asymptomatic, but this may not be a valid judgment given her underlying neurological condition.

The incidence of hyperuricemia is known to be higher among transplant patients than in the general population, and the time until gouty arthritis and nodules develop is also shorter.[8] Our patient had several factors that favor hyperuricemia and the deposition of urate crystals in the subcutaneous tissue, including renal transplant and treatment with ciclosporin, corticosteroids, and diuretics.[8]

Trauma and venous stasis have also been implicated in the etiology of gouty panniculitis, to explain the more frequent involvement of the lower limbs.[1,4] Nor can trauma be ruled out, as the lesions were only found on the posterior aspect of the legs, an area in constant contact with the wheelchair. Some authors consider that pancreatic diseases causing fat necrosis could also contribute to the development of these forms of panniculitis.[1,4]

Histology revealed deposits of an amorphous eosinophilic material in the hypodermis accompanied by an inflammatory infiltrate with histiocytes, neutrophils, and foreign body giant cells. Most of the urate crystals dissolve with standard processing and fixing techniques, and the tissue must be fixed with ethanol or frozen in order to identify them.[3]

Diagnosis is easy in those cases in which there are associated arthritis, tophi, and hyperuricemia; however, when gouty panniculitis is the first manifestation, gout tends not to be suspected. In our case, given the history of kidney transplant and a high level of immunosuppression, our initial differential diagnosis was of infectious panniculitis, indurate erythema, or metastatic calcification. Infectious panniculitis is more common in immunocompromised individuals; it can be caused by bacteria, mycobacteria, or fungi. Histologically this is a lobular or mixed panniculitis with a marked neutrophilic infiltrate, variable degrees of necrosis, vascular proliferation, and hemorrhage. Indurated erythema presents with ulcerated nodules and is characterized microscopically by a lobular panniculitis with a mixed inflammatory infiltrate and vasculitic changes. Metastatic calcification is more common in patients with renal failure, particularly those with disturbances of the calcium-phosphate balance and hyperparathyroidism; it can present as benign nodular calcifications or as calciphylaxis. Benign nodular calcifications are asymptomatic lesions produced by the deposition of calcium in the dermis and the subcutaneous tissue, while calciphylaxis produces very painful ulcers resulting from the deposition of calcium salts in the vessel walls.[9]

The most common treatments are allopurinol at a dose of 2-10 mg/kg/d and colchicine at a dose of 0.6 mg/d.

In patients with moderate or severe renal failure, the dose of allopurinol must not exceed 100 mg/d. In the case of extensive, painful lesions, once an infectious etiology has been excluded, a tapering course of systemic corticosteroids starting at a medium dose can be used to reduce the inflammatory component.[5]

We therefore consider that gouty panniculitis should be included in differential diagnosis of panniculitis, particularly when the patient presents gout or has a history of the disease. When gout is not present, gouty panniculitis should also be considered if there are predisposing factors such as

renal failure, pancreatic disease, local trauma, or use of hyperuricemic drugs.[10,11]

Conflicts of Interest

The authors declare no conflicts of interest.

References

1. Niemi KM. Panniculitis of the legs with urate crystal deposition. Arch Dermatol. 1977;113:655–6.
2. Leboit PE, Schneider S. Gout presenting as lobular panniculitis. Am J Dermatopathol. 1987;9:334.
3. Conejo-Mir J, Pulpillo A, Corbi MR, Linares M, García López A, Conde F, et al. Panniculitis and ulcers in a young man. Arch Dermatol. 1998;134:499–504.
4. Zinder AA, Barsky S. Gouty panniculitis: a case report and review of the literature. Cutis. 2005;76:54–6.
5. Dahiya A, Leach J, Levy H. Gouty panniculitis in a healthy male. J Am Acad Dermatol. 2007;57(2 Suppl):S52–4.
6. Iglesias A, Londono JC, Saaibi DL, Peña M, Lizarazo H, González EB. Gout nodulosis: widespread subcutaneous deposits without gout. Arthritis Care Res. 1996;9:74–7.
7. Vorob'eva GP, Generalova S, Balkarov IM. Panniculitis in gout. Ter Arkh. 1992;64:104–5.
8. George T, Mandell BF. Gout in the transplant patient. J Clin Rheumatol. 1995;1:328–34.
9. Gómez de la Fuente E, Vicente FJ, Álvarez JG, Naz E, Palencia SI, Pinedo F, et al. Calcifilaxis en pacientes dializados. Actas Dermosifiliogr. 2004;95:178–82.
10. Peters M, Daniel Su W. Panniculitis. Dermatol Clin. 1992;10: 37–57.
11. Falasca GF. Metabolic diseases: gout. Clin Dermatol. 2006; 24:498–508.

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