

A Rare Presentation of Severe Gout: Total Joint Destruction with Simultaneous Massive Extra-Articular Dissemination Including Panniculitis

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Introduction

- Gout is a metabolic disease that results from an increased concentration of uric acid in the body (1). This results in crystal formations in the joints of the body (2). The most common site of manifestation is the first metatarsophalangeal joint (3). However, in some rare and poorly understood cases, gout can manifest in abnormal forms including total joint destruction and even extra-articularly such as in the legs and abdomen (4).
- To our knowledge, there has only been ten reported cases of gouty panniculitis world-wide. Furthermore, there are even fewer reported cases of gout requiring amputation. There is none, to our knowledge, of both simultaneous manifestations.

Case Report

- 46 year old male presented to the ER with severe foot pain, fever, and chills. He hadn't seen a doctor in over 20 years. Only known medical history was hypertension. Physical exam was positive for tophaceous deposits diffuse throughout the patient's body including bilateral earlobes, eyelids, abdomen, forearms, thighs, knees, hands and feet (Figures 1 and 3). Additionally, there were multiple ulcerations, draining gout crystals from the legs, arms and abdomen (Figure 2). Cellulitis of the right foot first metatarsophalangeal joint with streaking to the mid leg was present (Figure 3). Foot X-ray revealed total destruction of the 1st MPJ with diffuse gouty arthritis to majority of the remaining joints of the foot and ankle (Figure 4). Uric acid upon admission was 10.6 and patient met SIRS criteria. He was admitted for sepsis from cellulitis secondary to infected ulcerated gouty tophi.
- Patient was medically cleared and taken to surgery for incision and debridement of right foot 1st MPJ. Intraoperatively, it was revealed that the joint was completely destroyed and the distal half of bone was replaced with gouty crystal accumulate (Figure 5 and 6). Of note, the presumed gouty crystals were so numerous, that a "honeycombing" pattern of distribution was appreciated in the surrounding soft tissues (Figure 6). It was then indicated to perform a partial first ray resection. Surgical pathological specimens diagnosed as high levels of gouty tophi as well as acute osteomyelitis of the metatarsal bone.
- Daily wound care was applied to the surgical site as well as other ulcerative sites. Medical management during admission, patient upon admission was diagnosed with acute kidney injury limiting the medicinal treatments for his gout and pain. Allopurinol and oral steroids were given during stay.



Figure 1



Figure 2



Figure 3



Figure 4

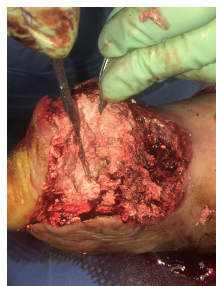


Figure 5



Figure 6

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Summary

- Upon discharge, medical management of gout per rheumatology with allopurinol and colchicine has yielded success in decreasing the quantity of tophaceous distribution. Surgically, his amputation site has healed without complication. He is now weightbearing and under proper pain control. Diffuse gouty ulcerations and panniculitis have resolved with medical management.

Discussion

- While elevated serum uric acid levels is evident in gout, our current knowledge of the pathogenesis is incomplete (5, 6). Ochoa et al suggested that inflammatory changes of the lobular subcutaneous tissue can be triggered and perpetuated by the arterial blood supply disruption caused by monosodium urate crystals. There is also some microtrauma of the wall of terminal blood vessels as well as a communication loss between the vessels and the dermis, making the tissue vulnerable (5).
- Unlike previous reports of extra-articular gout, our case demonstrates the potential of intra-articular gout to result in total joint destruction resulting in amputation. Shukla et al documented a severe case of extra-articular gout and described the findings as "miliary" or "disseminated cutaneous gout" (7). The medical and surgical management of our patient resulted in the successful short term and long term treatment of this patient, who has not had another acute episode since hospitalization 12 months ago.

Conclusion

- Lack of medical care in the presence of gouty arthritis can lead to poorly understood manifestations. This is likely due to the course of pathology that isn't fully understood. However, management of symptoms given the proper treatment regimen can improve quality of life and progression of the disease.

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