

Gout Not Out: Fine-needle aspiration cytology is the third umpire

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Sir,

Gout is a chronic inflammatory arthropathy characterized by deposits of monosodium urate (MSU) crystals in and around small joints of hands and feet. However, these deposits can also be found in soft-tissue forming nodules and masses. Such lesions are frequently referred to fine-needle aspiration cytology (FNAC). We hereby present a case of an elderly male who presented with similar swellings and the classic cytomorphologic findings enabled a quick and correct diagnosis, allowing prompt initiation of treatment.

A 61-year-old male complained of swellings on bilateral ankles and great toes was referred for FNAC. The swellings were present for 2 years and involved the lateral aspect of bilateral ankles (3.5 cm × 3 cm × 2 cm each) and the medial aspect of bilateral great toes (2.5 cm × 2.5 cm × 2 cm each). These were firm to hard, non-tender, and non-mobile with uneven whitish discoloration of the overlying skin (Fig. 1a). Plain X-ray revealed features suggestive of inflammatory arthropathy, likely to be gout (Fig. 1b). FNA yielded thick and chalky-white material. Giemsa stained smears revealed abundant slender, needle-shaped crystals against pink amorphous granular material in the background (Fig. 2). Few scattered inflammatory cells with occasional multinucleated giant cells were also noted (Fig. 2 inset). Based on the cytology findings, a diagnosis of gouty tophi was rendered. The patient was reviewed and found to have raised serum uric acid levels (9.1 mg/dL). The patient was then advised consultation in rheumatology outpatient department where anti-gout therapy comprising Tablet Febuxostat (40 mg, twice a day) was started. The patient reported a reduction in the size of the swellings till 10 months of follow-up.

Periarticular soft-tissue masses include lesions with inflammatory as well as neoplastic etiology. Gout is one such entity in the former group. FNAC is routinely done for evaluating such soft-tissue masses; it is now being employed for confirmation of clinically suspected cases of gout¹. Gout is characterized by deposits of MSU crystals within and around small joints. These nodular soft-tissue deposits called *Tophi* occur in the setting of long-standing gout and maybe its only primary manifestation as in our case [1]. They mimic neoplasms of hand, forearm, and



Figure 1: (a) Nodular soft-tissue swellings over medial aspect of bilateral great toes and lateral aspect of bilateral ankles; (b) plain radiograph showing soft-tissue swellings on medial aspect of bilateral great toes and lateral aspect of bilateral ankles. The swellings are accompanied by punched out juxta-articular and marginal erosions with overhanging edges. Joint spaces are preserved

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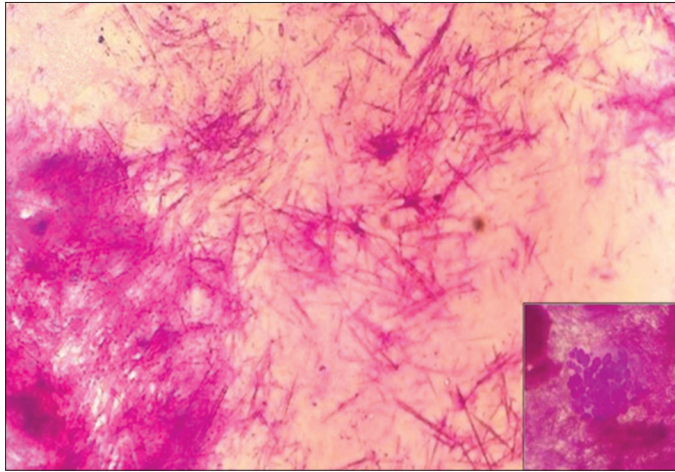


Figure 2: Photomicrograph of aspirate showing slender, needle-shaped crystals scattered singly, and in clusters against pink amorphous granular material in the background (Giemsa stain, ×400). Inset: Occasional multinucleated foreign body type giant cell also noted (Giemsa stain, ×400)

foot [2,3]. Furthermore, there are reports about these clinical mimickers where FNAC provided a reliable final diagnosis of gout [3,4]. Aspiration of classical, chalky-white material prompts careful search for characteristic crystals. While these crystals get dissolved in histopathologic tissue processing, they are excellently demonstrated in Giemsa stained smears [3,5]. Thus, the presence of classical chalky-white aspirate along with identification of typical needle-shaped crystals on microscopy can allow reliable

diagnosis of this medically treatable condition. While gouty tophi can be diagnostically tricky for pathology residents under training, knowledge of the classic cytomorphologic features can enable the screening pathologists to make a quick and correct diagnosis using a simple diagnostic modality of FNAC and guide timely initiation of appropriate treatment to the patients.

REFERENCES

1. Schumacher HR, Chen LX. Gout and other crystal-associated arthropathies. In: Jameson JL, Kasper DL, Longo DL, Fauci AS, Hauser SL, Loscalzo J, editors. Harrison's Principles of Internal Medicine. 20th ed. New York: Mc-Graw Hill Education; 2018. p. 2631-2.
2. Hee LW, Singh VA, Jayalakshmi P. Can gout mimic a soft tissue tumour? BMJ Case Rep 2010;2010:bcr09.2009.2266.
3. Parate SN, Yenkeswar PN, Helwatkar S, Munshi MM, Hingway HR, Bobhate SK. Cytodiagnosis of gouty tophi: A report of two cases. J Cytol 2005;22:148-9.
4. Agrawal K, Puhaja S, Agrawal C, Harbhanjkar A. Fine needle aspiration cytology of gouty tophy with review of literature. J Cytol 2007;24:142-5.
5. Shidham V, Chivukula M, Basir Z, Shidham G. Evaluation of crystals in formalin-fixed, paraffin-embedded tissue sections for the differential diagnosis of pseudogout, gout, and tumoral calcinosis. Mod Pathol 2001;14:806-10.

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