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Chronic Gout Presenting as Whitish Bullae over Palmer Surface of Hand

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Abstract

Subcutaneous bullae over the finger can prove to be a challenge to diagnosticians and clinicians as it can mimic several other joint-related lesions. Gouty tophus and its diagnosis can be difficult in cases of atypical presentations. This report describes a case of chronic gout presenting as subcutaneous bullae only over palmer surface of hand, including the cytologic and histologic findings. A 41-year-old male presenting with multiple subcutaneous bullous lesions of 1 year duration came to the cytology out patient department for a Tzanck preparation. Aspiration yielded chalky white material. FNA smears revealed abundant granular amorphous material, and slender needle-like crystals with a granulomatous inflammatory reaction. Histopathologic confirmation was done and serum uric acid level was 16mg/dl. Fine needle aspiration cytology (FNAC) is a valuable diagnostic tool for the diagnosis of gouty tophi, even in cases of unusual presentation and the pathologist should be aware of the cytological features.

Keywords: Bullous Lesions; FNAC; Granulomatous; Gouty Tophi

Introduction

Gout is a hyperuricemic disorder, which usually manifests as acute arthritis commonly involving the great toe. Gout presenting as subcutaneous bullae is rare [1]. Chronic tophaceous gout presents as soft tissue masses[2,3]also need to distinguish gout from rheumatoid nodules, abscesses, fibromas and other mesenchymal lesions[4]. The case reported by the authors is a rare case of gout presented as bullae over palmer surface of hand only. Gout can be diagnosed by demonstrating gouty crystals in a FNAC smear. Authors present a clinico-cytological profile of a case of gouty tophi without associated arthritis.

Case Report

A 41-year-old male presented with multiple subcutaneous bullous lesions over palmer surface of both hands of one-year duration (Figure 1). He came to the cytology OPD for a Tzanck preparation. FNAC performed from different nodules yielded chalky white particulate material. The smears were stained with H and E and Diff Quick, revealed stacks and sheaves of slender needle shaped crystals with a granulomatous inflammatory reaction comprising of foamy histiocytes, chronic inflammatory cells and foreign body type of giant cells (Figure 2). The possibility of gout was considered of and the patient was advised punch biopsy, serum uric acid assay estimation and X-ray of both hands.

Laboratory results included : hemoglobin 11.5 gm/dl, ESR 30 mm/hour, total leukocyte count(TLC) 8.7 x 10^9 /l, total platelet count(TPC) 180 x 10^9/l, fasting blood sugar(FBS) 85 mg/dl and serum uric acid level

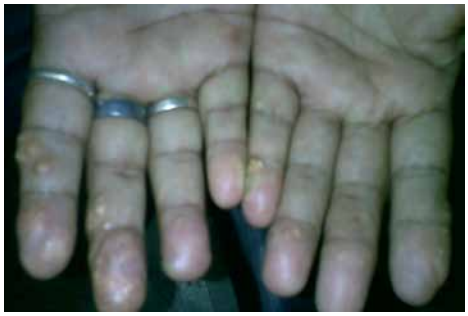

Figure 1: Photo showing bilateral bullous lesions over palmer surface of hand.

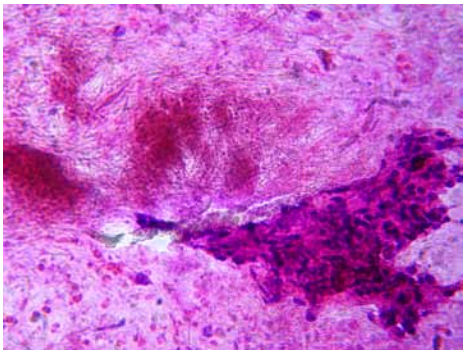

Figure 2: FNA smear showing needle like crystals and associated granulomatous inflammatory reaction (H & E, x400).

16.0mg/dL. X-ray of hand showed no abnormality. Based on the above findings, a diagnosis of gout was made and the patient is responding to allopurinol therapy.

Histomorphology study undertaken later, revealed skin with gouty tophi. The tophus from finger showed amorphous pink material representing sodium urate aggregate with giant cell reaction.

Discussion

Gout is a disease of uric acid metabolism caused by a disturbance in purine metabolism, where crystals of monosodium urate are deposited. It usually presents with recurrent painful monoarthritis of great toe [1]. Chronic gout (tophaceous gout) most often presents as whitish nodules in dorsal toes, metacarpophalangeal joints, ear pinna, olecranon bursa, kidney and soft tissue but gout presenting as bullous lesion is extremely rare. In our case, bullous lesions were only present over palmer surface

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of hand, which yielded chalky white material on FNAC, is a unique presentation.

Prevalence of gout is highest in industrialized countries, with major risk factors including alchohol, diuretic therapy, hypertension, renal dysfunction and obesity. Other conditions include psoriasis, myeloproliferative diseases, post-operative state and hyperparathyroidism [1,5]. None of these factors was present.

Diagnosis of gouty tophus is usually established when clinical and radiological features are classic. On radiographs, the bony defect is almost always bone destruction, as a result of deposits of tophi in bone [4,6]. In acute gout, serum uric acid levels are not very reliable and can be normal but in tophaceous gout, particularly in those with unusual presentation, serum uric acid is usually elevated (16.0 mg/dL in the case reported) and FNAC can be diagnostic. Demonstration of monosodium urate crystals is the gold standard for the diagnosis of gout [4,6].

The differential diagnosis of this disease on FNAC includes calcium pyrophosphate dehydrate (CPPD) crystal deposition disease (pseudogout) and calcinosis cutis. Pseudogout results in calcification and deposition of CPPD crystals which are rhomboid-shaped, blunt ended and weak birefringent on polarization. In tumoral calcinosis cutis, there is calcification, but absence of crystalline structure on FNAC.

FNAC which is less invasive, simpler and cost effective serves as a good alternative to biopsy and fluid analysis for crystal demonstration. Crystal demonstration is also superior in FNAC smears verses histopathology sections in which crystals are more commonly lost due to processing. Thus, FNAC is a simple and effective technique for evaluation of gouty tophi and cytopathologist/clinicians should be aware of their features especially in cases of atypical presentation.

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