Case Report

Cytodiagnosis of Gouty Tophi – Case report

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Abstract

Gout is a clinical syndrome which is characterized by hyperuricemia and recurrent acute arthritis. Accumulation of tophi in joints triggers the inflammatory response of gouty arthritis. We report here a case of gouty tophi diagnosed by fine needle aspiration, along with review of literature. A 53 year old male presented with multiple subcutaneous nodules on both feet. The nodules were firm and nontender. Fine needle aspiration was diagnostic as it revealed granular amorphous material and scattered stacks and sheaves of slender needle shaped crystals few histocytes and chronic inflammatory cells. Radiographs of both feet showed extensive soft tissue swellings with underline bone erosion. The serum uric acid levels were found to be raised confirmed diagnosis. Fine needle aspiration is an effective tool in the diagnosis of gouty tophi. Difficulties in management can be avoided by using the fine needle aspiration technique.

Key words: Gouty tophi, Hyperuricemia, Fine needle aspiration

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INTRODUCTION

Gouty tophus is an important cause of periarticular swelling and its diagnosis can be difficult in cases of atypical presentation in absence of arthritis[1]. As FNAC is becoming a popular clinical practice in the diagnosis of soft tissue nodules, important for a pathologist to be aware of microscopic findings and differential diagnosis of tophi[2].

CASE REPORT

A 53 year old male presented with multiple subcutaneous nodules on both feet. These nodules were firm and nontender. Patient had no systemic complaints, no H/o arthritis. FNAC was performed from all three nodules using 23 guage needle. It yield white, chalky, particulate material. Light microscopy of H and E and MGG stained smears demonstrate abundant granular amorphous material and scattered stacks and sheaves of slender needle shaped crystals, few histocytes and chronic inflammatory cells. Based on the above findings, diagnosis of gouty tophi was given. On further investigations radiographs of both feet showed extensive soft tissue swellings with underline bone erosion. There is no evidence of any calcification within the swellings. The patients serum uric acid levels were found to be high (12.5 mg%).

DISCUSSION

Gout is caused by persistent, chronic hyperuricemia, usually manifest as acute arthritis but can also present in the form of asymptomatic hyperuricemia, chronic gout or nephrolithiasis[3]. Tophi are soft tissue masses usually periarticular. Diagnosis of gout is easily made in typical cases with presence of arthritis and hyperuricemia[4,5]. However arthritis and hyperuricemia may not be present in all cases. Uric acid levels can be normal especially in diabetics and alcoholics[6]. In our case also, patient did not present with any clinical evidence of arthopathy. A cytology differential diagnosis of crystalline tophus includes tumoural calcinosis and tophaceous pseudogout. Tophaceous pseudogout is one of the rare clinical forms of calcium pyrophosphate dehydrate crystal deposition (CPPD) disease. Though tophaceous gout and pseudogout may share some clinical features, the CPPD crystals are shorter, more often rhomboid than needle shaped MSU crystals[7]. Tumoural calcinosis is an idiopathic condition presenting as swelling around the large joints. The calcified material in tumoural calcinosis is hydroxyapatite in nature and shows amorphous intensely basophilic granular appearance.

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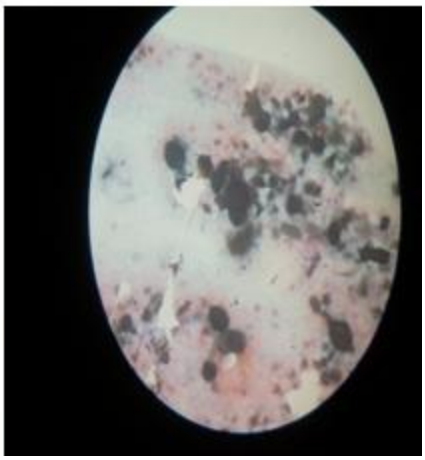

Legend

Figure 1: Phoograph showing gouty tophi.

Figure 2: Radiograph showing soft tissue swelling and underlying bone erosion.

Figure 3: Photomicrograph showing deposits of MSU crystals (HandE, 10X)

CONCLUSIONS

FNAC is valuable tool in elucidating the nature of periarticular nodules. It serves as a good alternative to excision biopsy for diagnosis of gouty tophi. It is less invasive simpler and cost effective technique as compared to biopsy. Crystal demonstration has also been seen to be superior in FNAC smears versus histopathology sections in which crystals are more likely to be lost during processing.

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