

Unusual Presentation Of Gout –A Rare Case Report

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Abstract: Gout is a metabolic disorder caused by deposition of monosodium urate crystals within the joints. Periarticular nodules can prove to be a challenge to both clinicians and diagnosticians; various causes include rheumatoid nodules, ganglion cysts, pigmented villonodular synovitis, synovial chondromatosis and synovial sarcoma. Gouty tophus is an important differential diagnosis and its diagnosis can be difficult in cases of atypical presentation in the absence of arthritis and /or hyperuricemia. We present a case in which diagnosis of gout was made by fine needle aspiration of tophus from nodules which is efficient method of making a quick diagnosis with characteristic cytological features.

Keywords: Gout, Fine needle aspiration cytology, Tophi, Nodules,

I. Introduction

Gout is a chronic hyperuricemic crystal induced arthropathy. Gouty tophi may be found in synovial membrane, periarticular ligaments, tendons, soft tissues, subcutaneous tissue, Achilles tendon and helix of the ear. Gout can affect any part of the body and tophi can be the first clinical sign. The tophi in gout tend to grow slowly, eventually ulcerating and forming a non-healing ulcer which can be often be mistaken for a neoplasm. The definitive diagnosis of gout is best established by demonstration of monosodium urate crystals. Here we present a case of 60 years old male presented with multiple subcutaneous nodules was diagnosed gout by fine needle aspiration cytology.

II. Case Report

A 60 yr old male presented with multiple subcutaneous nodules on both hands and feet including great toe and lateral malleoli [fig : 1] [fig : 2], on both elbows, both knee joints ranging from 0.5 to 2.5 cm since 4 months. These nodules were firm and tender. Patient had no systemic complaints. Radiographs of both the feet (anterior-posterior view) and hands showed extensive soft tissue swellings overlying base of left great toe, interdigital and metacarpal phalanges. No evidence of any calcification or lucency was seen within the swellings. Underlying bones and articular surfaces appeared normal. No definite clinical diagnosis was given and patient was sent for FNAC. Serum uric acid level was increased 9.7 mg/dl. CRP non-reactive, RA Factor-negative, ASO –positive, ESR- 74mm/hour .FNAC was performed from multiple sites. It yielded white, chalky particulate material. Light microscopy of the H&E stained smears demonstrated abundant granular amorphous material and scattered stacks and sheaves of brown coloured slender needle shaped crystals [fig : 3] Polarized light microscopic findings of aspirated smears revealed birefringence needle shaped crystals [fig : 4]



Figure 1 : Multiple nodular swellings on both hands



Figure 2 : Nodular swellings on both feet



Figure 3- H&E stained (40 X) revealed scattered stacks and sheaves of brown coloured slender needle shaped crystals

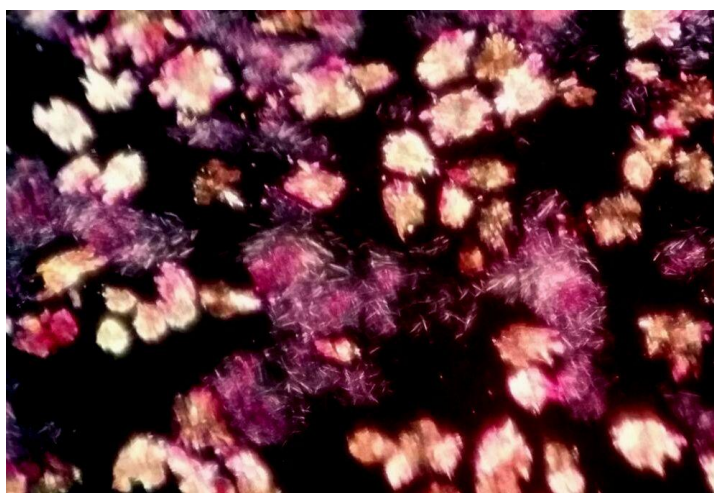


Figure 4: Birefringence crystals under polarized light (40X)

III. Discussion

Gout is a chronic metabolic disorder characterized by hyperuricemia and deposition of Mono Sodium Urate crystals in joints and within peri-articular soft tissues [1]. Predisposing factors include heavy alcohol intake, overuse of diuretics, and analgesics like acetylsalicylic acid, purine rich diet, obesity, hypertension and renal compromise. It often presents with painful joint effusion and commonly is diagnosed either by clinical examination, elevated serum uric acid level or cytological examination of an effusion. Hyperuricemia in gout may be primary or secondary. Primary hyperuricemia is either the result of inborn errors of purine metabolism (urate over-producers) or related to a reduction in the renal excretion of uric acid (urate under-excretors). The secondary causes of hyperuricemia include systemic diseases with extensive cell turnover including malignancies and renal disease [6]. Cytological diagnosis of gout is contingent on the identification of the characteristic crystals in joint fluid. With either untreated hyperuricemia or long standing gout characterized by multiple episodic bouts of arthritis, gouty tophi will form in the soft tissues[3] FNAC is a simple, inexpensive diagnostic tool in diagnosing the cause of nature of periarticular nodules in case of gouty tophus[1],[2],[3],[4],[5]. It is less invasive, simpler and cost effective technique as compared to synovial biopsy, which causes more tissue trauma and requires sterile set up. Aspirate in most of the cases was chalky white, particulate with a tendency to get washed off the slides. This view was opposed by others who found crystals in Papanicolaou stained smears as well. We found crystals and could demonstrate birefringence in H&E stained smears. Crystals can also be demonstrated in wet mount preparations from needle washings made by flushing the aspirating needle with absolute alcohol [1]. Crystal demonstration has also been seen to be superior in FNAC smears versus histopathology sections in which crystals are more commonly lost during processing. Differential diagnoses of crystalline tophus include tophaceous pseudogout and tumoral calcinosis. Tophaceous pseudogout is characterized by deposition of calcium pyrophosphate dehydrate (CPPD) crystals which on smears are shorter, more rhomboid than needle shaped. On polarizing microscopy Mono Sodium Urate crystals of gout are negatively birefringent where as CPPD crystals of pseudogout weakly positive birefringence. Thus demonstration of monosodium urate crystals in FNAC smears from nodular masses establishes the diagnosis of gout unequivocally. Radiological calcification commonly seen in pseudogout and tumor calcinosis is relatively uncommon in gout [2] [7] [8]. However it can be missed by inexperienced cytopathologists. Presence of amorphous granular debris should alert pathologist to search for crystals. In asymptomatic patients where clinical suspicion of gout does not exist, FNAC can be an important diagnostic modality as characteristic cytological features exist. The advantages of FNAC over open biopsy and other surgical procedures have made FNAC an increasingly popular procedure.

IV. Conclusion

FNAC is an easy, minimally invasive and cost effective procedure for diagnosing gouty tophus. It is accurate and replacing biopsy for the diagnosis of gouty tophus.

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