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Crystalline Arthropathy - A Case Report

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Abstract: ***A short histopathological case of crystalline arthropathy was diagnosed in a 46 year old male with swelling over right ankle and elevated serum uric acid level.***

1. Introduction

Gouty arthritis is an acute inflammatory process[1,2] followed by deposition of urate crystals and chronic inflammatory reaction leading to the formation of tophi in joints[3,4]. This affects the renal system subsequently.

2. Case Report

46 yrs old male presenting with swelling over right ankle for one year followed by pain in the first metatarsal joint for a month. On examination: 8 x 3 cm swelling seen over the right malleolus.

3. Investigation findings

On aspiration: Abundant whitish pus like material aspirated and sent for microbiological study. The pus culture and sensitivity revealed no growth. The biochemical investigation revealed serum uric acid level of **9 mg/dl** (normal range: 3.4 – 7 mg/dl) . A lump of tissue obtained during debridement was submitted for Histopathological evaluation.

4. Histopathological Findings

The specimen submitted to pathology contained a single, grey black soft tissue mass measuring 1.5 x 1 cm. External surface appeared nodular and congested. Cut surface appeared grey white. Microscopy showed fibromuscular and fibrocollagenous tissue showing multiple foci of eosinophilic nodular amorphous deposits surrounded by palisading of foreign body giant cells (Figure-1,2). There was scanty secondary inflammation and no evidence of any malignancy .(Figure- 3-5). Special stains did not reveal any specific infective elements or foreign body material.

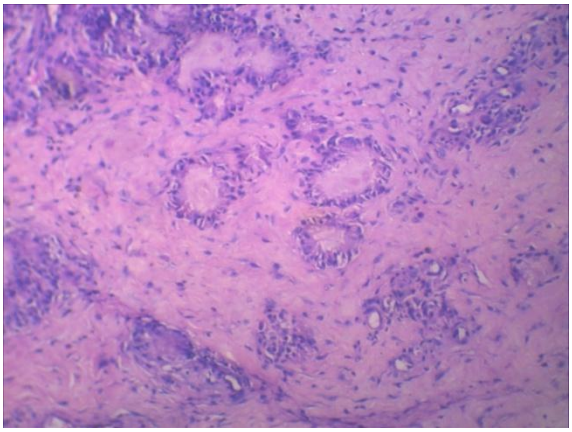

Figure 1: Scanner view – Multiple Tophi

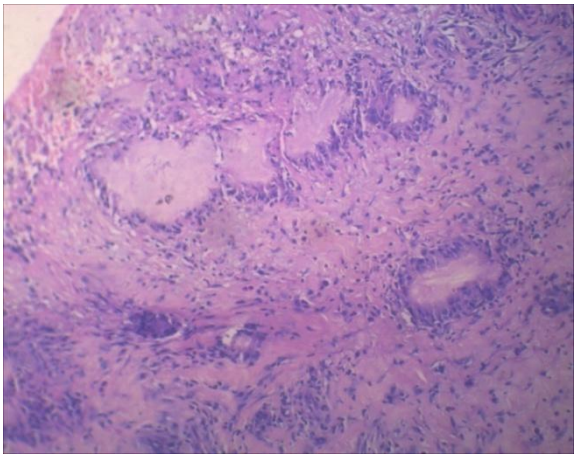

Figure 2: Scanner view – Multiple tophi

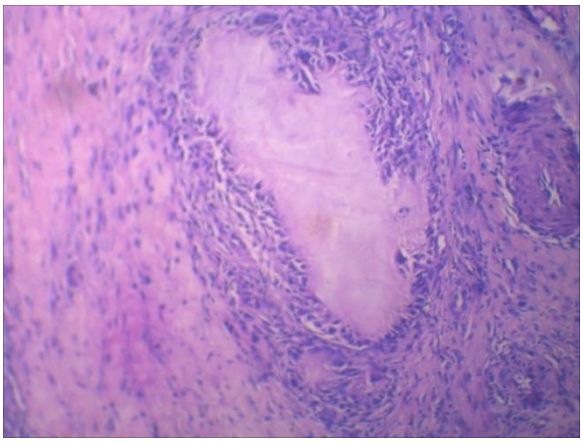

Figure 3: 10x view – Eosinophilic deposit – Tophi

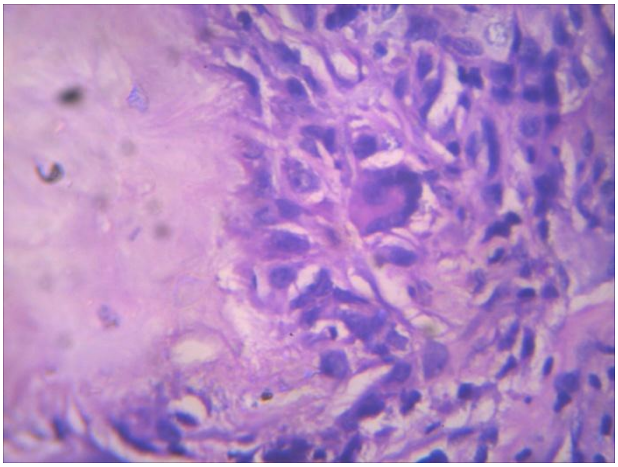

Figure 4: 40x view – Giant cell reaction around the Tophi

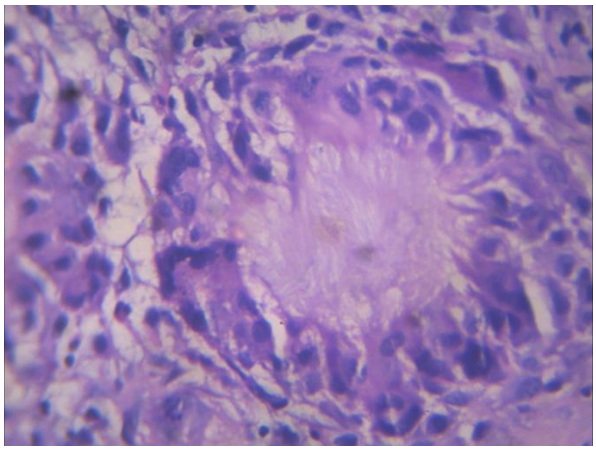

Figure 5: 40x view – Large Tophi with surrounding foreign body reaction

5. Discussion

Gout is a form of crystalline arthritis caused by excess uric acid in the bloodstream. The symptoms of gout are due to the formation of uric acid crystals in the joints and the subsequent response by the immune system[5,6]. Primary gout (90%) is idiopathic (85%) or due to overproduction of uric acid or known enzyme defects (5%) such as partial hypoxanthine guanine phosphoribosyl transferase deficiency [HGPRT]; The excretion may be normal. Secondary gout (10%) is due to increased nucleic acid turnover due to leukemia / lymphoma, chronic renal disease or HGPRT deficiency. The hallmark of the Gouty inflammation is the presence of Tophi, composed of needle shaped aggregates of urate crystals with surrounding giant cell reaction (Fig. 3-5). In our case the location was unusual, though the presentation was typical[7,8]. Since the index of suspicious for infective etiology was high, the fluid examination for crystals was not carried out which would have clinched the diagnosis without any invasive procedure. The lesions melt with proper chemotherapy and are very sensitive to treatment, without which systemic especially renal & multi articular complications emerges.

6. Conclusion

In any joint space with a longstanding lesion, the diagnosis of cryatalline arthropathy should be suspected.

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