INTRODUCTION
Multiple subcutaneous periarticular nodules can be because of various causes which include rheumatoid nodules, ganglion cysts, pigmented villonodular synovitis, synovial chondromatosis and synovial sarcoma. Gouty tophus is also an important differential diagnosis. Clinically its diagnosis can be difficult in cases of unusual presentations in the absence of arthritis and/or hyperuricemia. A minority of individuals particularly elderly patients taking diuretics or corticosteroids are known to present with tophi without acute arthritis. Fine needle aspiration cytology (FNAC) can act as an initial valuable and cost effective tool in diagnosis of gouty tophi as soft tissue nodules.

CASE HISTORY
A 42 year old male presented with multiple periarticular, subcutaneous, soft and painless swellings on both upper and lower limbs at multiple sites and also ear pinna since 3 years. There was no history of any joint pains ever related with these swelling or any history of any chronic drug therapy. On examination all the swellings were subcutaneous nodules, freely mobile, soft in consistency and nontender. Nodules ranged from 6x6cm to 0.5x0.5cm in size. Tenderness was present only over over right ring finger. Some swellings on foot showed surface ulceration with thick white granular discharge.

X-rays revealed all swellings were soft tissue masses in the vicinity of the joints but no radiological features of arthritis was noted in adjacent joints. X-ray of right index finger showed bony erosion of the distal end of middle phalynx and proximal end of distal phalynx. Serum uric acid levels were found to be 9.5mg/dl.

Wet film preparation of the oozing thick white discharge showed refractile, long needle like crystals of monosodium urate (MSU) on microscopy. FNAC was done from all the swellings using 23 gauze needle. White material was aspirated from which alchohol fixed and air dried smears were prepared which were stained with hematoxyllin and eosin and Leishman stains, respectively. The smears showed amorphous material along with long needle like MSU crystals with foreign body giant cell reaction.

A swelling in the proximity of right elbow was also excised and sent for histopathological examination.
Tophi are soft tissue masses usually periarticular, that develop after a long standing gouty arthritis. But rarely may develop without concomitant arthritis \cite{10}. Iglesias et al \cite{3} used the term “gout nodulosis” to describe the subcutaneous deposits of MSU without gouty arthritis as initial manifestation. Soft tissue tophi can be mistaken for neoplasm clinically and radiologically \cite{9}.

Gout is easy to diagnose in presence of arthritis and hyperuricemia. But arthritis and hyperuricemia may not be rarely absent. Uric acid levels can be normal especially in diabetics and alcoholics \cite{6,9}. Uric acid levels were raised in the present case but with no clinical or radiological evidence of arthropathy, but bone erosion was present.

Interleukin-1ß has been implicated in bone destruction...
and erosions in gouty arthritis also MSU crystal deposition is associated with activation of osteoclasts and the receptor for activation of nuclear factor-κB (RANK) and RANK ligand (RANK–RANKL) which is also considered to be the cause of gouty bony erosions[7].

FNAC aspirates from tophi in most of the cases reported were chalky white as with the present case[1,2,5,8,9,11,12]. Nasser et al recommended the use of air dried smears stained with Diff Quick Romanowsky stain as they did not find wet fixed smears to be useful for demonstration of MSU crystals[8]. But in our study we found MSU crystals can also be well demonstrated in wet fixed smears stained by hematoxylin and eosin along with in air dried leishman stained smears. Crystals can also be demonstrated in wet mount preparations as in present study[8].

Microscopy showed in most of the cases, amorphous or granular material with needle like MSU crystals and multinucleated giant cell along with chronic inflammatory infiltrate this correlates with the present study findings[1,2,5,8,9,11,12]. Neutrophils[1,13] and epithelioid cells can also be seen in some cases[1].

On cytology, differential diagnosis of crystalline tophus includes tumoural calcinosis and tophaceous pseudo-gout but both can be excluded radiologically as they show calcification[2,4]. In the present case the diagnosis of gout was further confirmed by histopathology.

Thus, FNAC is proving to be a valuable tool and a good alternative to synovial biopsy and synovial fluid analysis for crystal demonstration. It is less invasive, simpler and cost effective technique as compared to synovial biopsy, which causes more tissue trauma and requires sterile set up.

CONCLUSION

1] FNAC is valuable in confirming the nature of subcutaneous nodules.

2] FNAC is useful in diagnosing gouty tophi and cytopathologist should be aware of their morphological features especially in cases of atypical presentation.

3] Whenever chalky white, amorphous or granular material is aspirated on FNAC a possibility of gouty tophus should be considered.

REFERENCES