

Cytodiagnosis of multiarticular chronic tophaceous gout

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Abstract

Gout is a disorder of uric acid metabolism that causes deposition of Monosodium Urate (MSU) crystals in joint spaces, which, in turn, elicit an acute inflammatory reaction. Gout causes intense pain, swelling and stiffness in a joint. It usually affects the joint in the big toe. We present a case in which diagnosis of gout was made by fine needle aspiration of tophus. FNAC of gouty tophus is an easy alternative to synovial biopsy. It is simpler, easier and less painful.

Keywords: Gout, Fine needle aspiration cytology (FNAC), Tophus, Monosodium Urate, Arthropathy.

Introduction

Gout is a chronic hyper-uricemic crystal induced arthropathy. Gouty tophi may be found in synovial membrane, peri-articular ligaments, tendons, soft tissues, subcutaneous tissue, achilles tendon and helix of the ear. The definitive diagnosis of gout is best established by demonstration of monosodium urate crystals in the synovial fluid. Fine needle aspiration can play a crucial role in diagnosis. We report the case of a 50 year male who presented with painful swelling over right great toe at first metatarsophalangeal joint and also at joints of the finger with swelling of the wrist.

Case Report

A 50 years old male came to orthopedics outpatient department with painful swelling over right great toe at metatarsophalangeal joint. He gave a history of painful arthropathy involving wrist joint and joints of the fingers. Local examination of right great toe revealed erythematous, soft tender swelling, measuring 2 x 2 cm (Fig. 1). Serum uric acid level was increased (11.2 mg/dl).

Radiograph of foot showed gouty tophus of first right metatarsophalangeal joint (Fig. 2). Fine needle aspiration of swelling over great toe and also at other sites was performed using 21 mm gauge needle. Alcohol fixed wet smears and air dried smears were made. Alcohol fixed smears were stained with Giemsa stain. Smears showed few histiocytes and smear background revealed the slender, rod shaped crystals. Flower-like arrangement of crystals was also seen. (Fig. 3)



Fig. 1: Soft, tender erythematous swelling of right great toe



Fig. 2: Radiograph showing gouty tophus of first right metatarsophalangeal joint

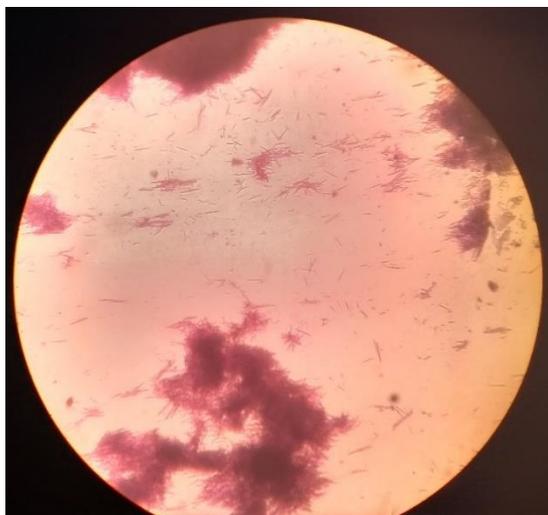


Fig. 3: Giemsa stained smear shows rod shaped crystals and flower like arrangement of monosodium urate crystals

Discussion

Gout is a disorder of uric acid metabolism that causes deposition of monosodium urate crystals in the joint spaces. It often presents with painful joint effusion and commonly diagnosed by clinical examination, elevated serum uric acid level and cytological examination of an effusion fluid. Cytological diagnosis of gout is based 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. These typically occur in and around the

joint spaces, but may present in other sites as well particularly the pinna of the ear.¹

FNAC of gouty tophi is an easy alternative to synovial biopsy and joint fluid analysis. It is simpler, easier and less painful. As crystals are preserved in stained smears, they can also be employed for polarization and confirmation of gout.²

Gouty tophi presenting as peri-articular masses are uncommon and often mistaken for a neoplasm. These nodules may not be recognized as the clinical diagnosis of gout in many instances is not straight forward. In such setting fine needle aspiration cytology (FNAC) of gouty tophi would facilitate the clinical diagnosis and treatment.³

Conflict of Interest: None.

References

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