

DERMATOLOGICAL MANIFESTATION OF GOUT

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INTRODUCTION

Gout is a common medical problem, affecting at least 1 percent of men in Western population, with a male: female ratio ranging from 7:1 to 9¹. Gout is a disease of purine metabolism characterized by the deposition of monosodium urate (MSU) crystals in tissues that may form as a result of hyperuricemia which represents the basic underlying metabolic abnormality.² Increased serum uric acid level is found in obesity, high protein diet, high alcohol consumption, combined hyperlipidemia, diabetes mellitus, ischemic heart disease and drugs.³ The deposition of MSU crystals in and around joints as well as soft tissues, produce masses commonly referred as tophi and usually thought to be a late manifestation of gout.⁴ Tophi mainly form over elbow, ankle, tendoachilles, fingers and ears. Tophaceous deposits are well known to cause joint destruction, **gouty** nephropathy, spinal cord compression⁵ and concomitant septic infection.⁶

In this case report we describe the clinical and histopathological features of a case of tophaceous gout in a 32 yr old male with chronic arthritis to emphasize the importance of considering this disease entity in the differential diagnosis of a soft tissue lesion.

CASE REPORT

A 32 years old male presented to skin OPD of Mayo Hospital, Lahore with complaints of bilaterally symmetrical nodular swellings affecting the hands, feet and extensor surface of elbows for the last 8 months. He had recurrent attacks of pain in the small joints of hands and feet partially relieved by medication. He denied any history of trauma and alcohol abuse or drug intake. There is no associated past medical or family history of diabetes, hypertension or rheumatological disease. Physical examination revealed multiple nodular swellings ranging from 2 x 4cm to 3 x 6cm in size, non tender, solid in consistency and mobile with discharging cheesy material from the palmar surface of fingers and the plantar surface of the feet. Similar lesions were also present on the extensor surface of elbows which were non tender, mobile and solid in consistency.



His blood examination, urine analysis, serum electrolytes, blood sugar, erythrocyte sedimentation rate were normal. Rheumatoid factor and anti nuclear factor were negative. His serum uric acid level was 12.3 mg/dl. His ultrasound abdomen showed bilateral nephrocalcinosis with normal renal function tests.

Radiographs of hands and feet were normal in our patient.

Histopathology examination showed amorphous material in dermis and subcutaneous tissue surrounded by marked granulomatous response in which many giant cells were evident.

The patient was put on treatment and discharged but later on the patient lost to follow up.

DISCUSSION

Gout is a metabolic disorder characterized by hyper-uricemia and deposition of monosodium urate monohydrate crystals within the periarticular soft tissues, resulting in recurrent painful arthritis. Ninety percent of gout is primary or caused by a congenital error of purine metabolism or a defect in the renal excretion of the crystals. Males dominate the disease population, with only a 5% female prevalence. Secondary gout occurs in 10% of all cases and is the result of increased turnover of nucleic acid, drugs, or acquired defective renal excretion. Patients most frequently complain of pain in the first metatarsal-phalangeal joint,



although any joint can be affected.⁷

Untreated gouty arthritis can result in continued deposition of urate crystals within the soft tissues, giving the appearance of a subcutaneous nodule known as tophaceous gout (as seen in the patient described). Gouty tophi are deposition of MSU crystals in and around joints as well as soft tissues. They commonly appear as firm, pink nodules or fusiform swellings.^{4,8,9} The overlying skin may be yellow, erythematous or ulcerated. The lesion may drain clear fluid with flakes of urate or thick chalky material.^{9,10} Complications of tophi include pain, soft tissue damage and deformity, joint destruction and nerve compression syndromes such as carpal tunnel syndrome¹⁰ as in our patient who developed flexion deformities of the fingers. Tophi are the hallmark of the disease and develop about 10 years after the first attack of gout² but in our patient tophi developed earlier in the course of disease. A Study in Taiwan showed increased incidence of gout with younger age of onset, high incidence of tophi, more frequent attacks and shortened interval from first gouty attack to formation of tophi¹¹ as was the case in our patient. Most common sites of the urate depositions are the synovium, the articular cartilage of joints, periarticular ligaments, tendons and soft tissues including the prepatellar bursa, olecranon bursa, subcutaneous tissue overlying tendons (Achilles tendon), the helix of the ear and base of great toe.^{2,4,10} Our particular case is interesting because this patient is having gouty tophi in all the described common sites of occurrence in the body, with typical cheesy material discharging from them. The early radiographic signs of gout are joint effusion and periarticular edema, caused by the deposition of the nonopaque crystals within the synovial and cartilagenous tissues. Eventually, there is osseous erosion, manifested as "punched-out" lesions at the margins of the articular surfaces of the hands and feet; these erosions contain sclerotic borders and are classically associated with overhanging edges.

Osteopenia and the loss of joint space are usually not seen until advanced disease stages.¹²

Although radiographs of hands and feet were normal in our patient and not supportive in diagnosis.

Histopathology is the most accurate tool for the diagnosis of gout as was in our case.

Treatment of acute attacks of gout involves colchicine, nonsteroidal anti-inflammatory drugs, and steroids. Preventative therapy includes allopurinol and uricosuric agents. Diet and exercise play an important role in the prevention of attacks. Bothersome large tophi can be surgically removed.

CONCLUSION

From the above discussion we hereby conclude that any patient presenting with multiple nodular swellings and discharging sinuses affecting the above mentioned sites associated with joint pains, gout must be considered as one of the important differential diagnosis.

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