White Powder Over Palm: An Unusual Presentation of Hyperuricemia in Polyarticular Gout

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Fig. 1: (a) Tophi and desquamation of skin over toe (b) Tophi over elbow (c) Polyarthritis involving hand joints (d) Uric acid as white powder over palm (e) Needle shaped crystal under light microscope

A 70 years old male presented with polyarthritis (both small & large joints) and multiple subcutaneous swellings since 25 years (Figure 1 A, B, C). There was white powder present over palm which oozed out from the body and reappear after wiping (Figure 1D). Patient was on corticosteroids for years together and he did not give history of acute flare of arthritis.

Laboratory investigations revealed Hb -11.0 g% TLC -12000 cells/ Cumm, ESR 85 mm Ist hour. Serum Creatinine was 1.8 mg%, S. uric acid was 12.0 mg%. On aspiration of subcutaneous swellings, joint fluid and on examination of white powder needle shaped crystals were seen under light microscope (Figure 1E). X-ray of foot showed erosions with overhanging edge (Martel's sign) (Figure 2). Final diagnosis was polyarticular gout with multiple tophi and chronic kidney disease. In patients with repeated attacks of acute gout, tissue deposits of monosodium urate crystals surrounded by granulomatous inflammation known as tophi are found in numerous tissues including joint and skin.[1] Tophi are associated with destruction of surrounding cartilage and bone. Bone erosion with overhanging edge (Martel's sign) is characteristic of gouty arthritis.

Monosodium urate (MSU) crystals identification in synovial fluid/tophi is considered the gold standard for diagnosis.[2] The MSU crystals are needle shaped negatively birefringent crystals, easily detected by polarizing microscope. Under light microscopy also MSU crystals may be seen as needle shaped crystals.

Fig. 2: X-ray of foot showed erosions with overhanging edge (Martel's sign) (arrow)

Though uric acid is secreted in sweat[2] but excretion of uric acid in sweat as white powder is rare. Literature showed uremic frost in chronic renal failure patients composed of urea[5] but we did not find frost composed of uric acid. The finding of uric acid as white powder on palm highlights the rarity in this report.

References

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Received: 20.03.2016; Accepted: 01.03.2018