Case Report

Abruption Pustular Gouty Tophi of Palm and Sole

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The authors present a case of a 70-year-old female who abruptly developed deep-seated pustule at both palms and soles. Aspiration content of the papule for gram's stain revealed needle-shaped materials with negative birefringence polarized light examination. Histological examination revealed deposition of amorphous materials surrounded by histiocytes, multinucleated giant cells, and lymphocytes in the dermis, which is a characteristic of gouty tophi. In conclusion, this is an extremely rare presentation of gouty tophi in all aspects including onset of presentation, duration after first episode of arthritis, site of involvement, and peculiar dermatological finding.

Keywords: *Arthritis, Gouty, Foot, Hand*

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Gouty tophi, collection of monosodium urate crystal, commonly present as gradually onset of subcutaneous nodule at periarticular site and usually occur at a mean time of 10 years after the first episode of gouty arthritis. The most common locations of tophi are the skin overlying joints and the helix of the ear. The present report described an extremely rare presentation of gouty tophi in all aspects.

Case Report

A 70-year-old woman presented with cellulitis at the right foot for 1 month. After having been treated with oral antibiotic, her condition was improved. Then, she developed an abrupt onset of multiple discrete deep-seated whitish papule and small nodule at both palms and soles. The color of this papule and small nodule changed gradually from whitish to yellow with minimal itching and pain. She has had underlying chronic renal failure, hypertension, osteoarthritis of the left knee for 5 years, and gouty arthritis for 1 year. Aspiration content of the papule for gram's stain was performed and showed needle-shaped materials. The polarized light examination revealed that the needle shaped crystals exhibited negative birefringence. Histologic examination revealed deposition of amorphous materials surrounded by histiocytes including with multinucleated giant cells as well as lymphocytes in the dermis. These histological findings are characteristic of intradermal gouty tophi (Fig. 1-4).

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Discussion

Gout is a metabolic disease in which needle-like shaped crystals of monosodium urate from supersatured fluids are deposition in tissue. Clinical manifestations include gouty arthritis, gouty tophi, uric acid nephrolithiasis, and renal impairment[1,2]. Cutaneous deposits of monosodium urate, also known as gouty tophi, usually occur after a mean time of 10 years from the first episode of acute arthritis[3]. Although tophaceous gout commonly presents as subcutaneous, sharply circumscribed nodular collection of monosodium urate crystals[4] at peri-articular site, in and around bursae, and in the soft tissue overlying tendon and cartilage[5-7], these tophi also have unusual presentations such as bullous[8], fungating[9], papular, and ulcerative[10] lesions. The most common locations for tophi are the skin overlying

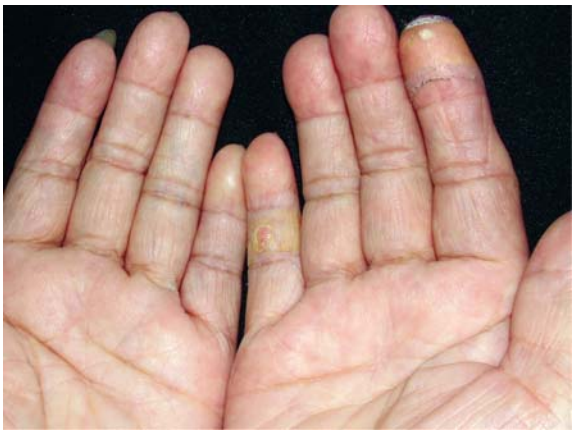

Fig. 1 Pustular lesion at both palms

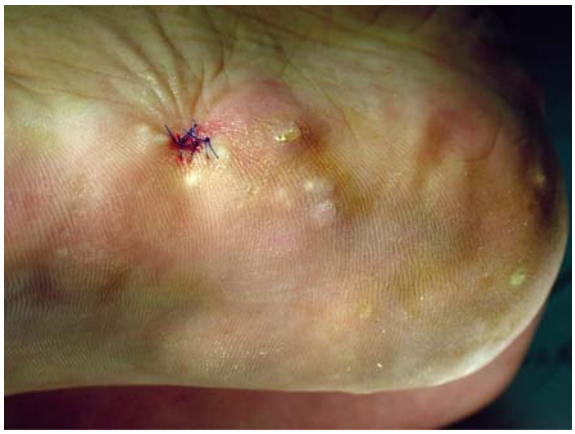

Fig. 2 Pustular lesion at left foot

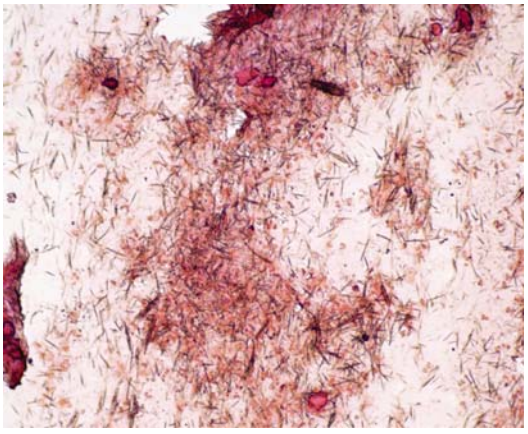

Fig. 3 Gram's stain revealed needle shaped materials

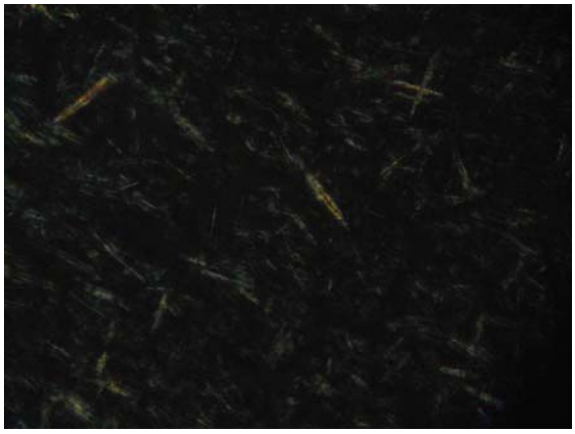

Fig. 4 Negative birefringence by polarized light examination

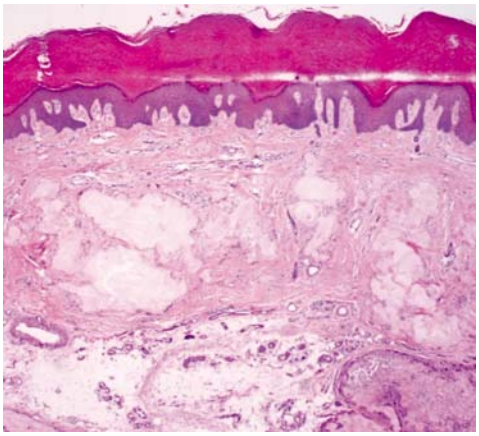

Fig. 5 H&E staining x20 revealed granulomatous reaction with foreign body giant cells in reticular dermis

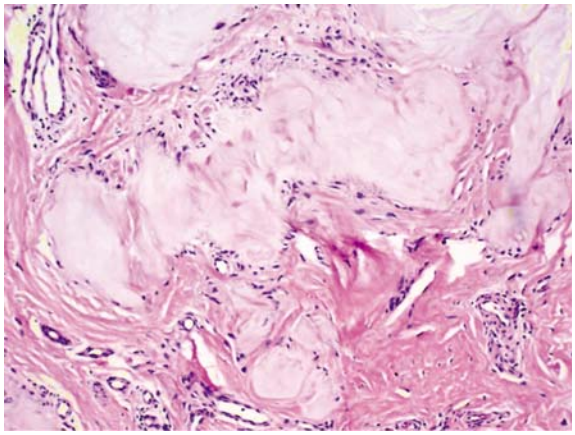

Fig. 6 H&E staining x400 revealed amorphous materials surrounded by histiocytes, giant cells and lymphocytes

joints and the helix of the ear. Unusual sites include the eye, nose, larynx, breast and heart valves, finger pad, penis, vocal cord, arythenoid cartilage, epiglottis, aorta, myocardium, spinal cord, and tongue[11-21].

The other rare presentation is intradermal tophi that are characterized by gradually onset of multiple tiny superficial, pustule-like to whitish lesions with occasional swelling and erythema. Adel and Janitzia[22,23] have previously reported the location of intradermal tophi including legs, forearms, buttocks, thigh, arms, abdominal wall, and finger but not a single case of palm and sole lesion. The differential diagnosis of cutaneous gouty tophi includes xanthoma, rheumatoid nodules, and calcinosis cutis, which can be easily diagnosed by examining fluid in polarized light or performing biopsy.

Risk factors predisposing an individual to development of intradermal gouty tophi include renal insufficiency, hypertension, chronic diuretics therapy, long duration of disease, and lack of consistent use of urate-lowering therapy[24].

The optimal serum urate level necessary for elimination of tissue deposits of monosodium urate in patients with chronic gout is still controversial. Some studies have suggested that the lower is serum urate level achieved during urate-lowering therapy, the faster is the reduction in tophaceous deposits[25].

In conclusion, this is the first report in Thailand of localized intradermal gouty tophi of palm and sole presenting as pustular lesion with an abruption onset and occurring at only one-year duration after gouty arthritis.

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การเกิดตุ่มหนองก้อนผลึกโรคเกาต์ที่ฝ่ามือฝ่าเท้าแบบเฉียบพลัน: รายงานผู้ป่วย 1 ราย

ยิ่งลักษม์ อภิบาล, สุเทพ จิระสุทัศน์, ศิริเพ็ญ พัววิไล

ผู้นิพนธ์นำเสนอผู้ป่วยหญิงอายุ 70 ปี ทั้งฝ่ามือและฝ่าเท้าเกิดตุ่มหนองแบบทันทีทันใด ดูดสิ่งที่อยู่ภายในตุ่มหนองย้อมสีแกรมตรวจพบสสารรูปร่างคล้ายเข็มที่มีลักษณะปราศจากการบิดระนาบหักเหแสงเป็นสองแนว การตรวจเนื้อเยื่อวิทยาพบว่ามีการสะสมของสารสีชมพูรูปร่างคล้ายขนนกที่ถูกล้อมด้วย ลิมโฟซัยท์ และแกรนูโลมาชนิด foreign body รอบผลึกเหล่านี้ ซึ่งเป็นลักษณะเฉพาะของ gouty tophi โดยสรุปแล้วเป็นการนำเสนอผู้ป่วย gouty tophi ที่มีการแสดงออกของโรคแปลกประหลาดทั้งในแง่ของตำแหน่งที่เกิดโรค ลักษณะผื่นที่ผิวหนัง ระยะเวลาในการเกิดโรคหลังจากที่มีอาการปวดข้อ และลักษณะการปรากฏของรอยโรคที่เกิดขึ้นอย่างฉับพลัน