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Tumoral calcinosis of the foot: An unusual differential diagnosis of calcaneal mass

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ABSTRACT

INTRODUCTION: Tumoral calcinosis (TC) is a rare disorder characterized by the development of calcified masses within the periarticular soft tissues of large joints. It commonly involves the hip, shoulders, and elbows. TC rarely involves the feet.
CASE PRESENTATION: In this report, we describe an unusual case of primary TC of the foot in a 76-year-old female and discuss the pathophysiology, diagnosis, and therapeutic interventions of the condition.
DISCUSSION: Due to the wide range of conditions mimicking TC, its diagnosis could be challenging. Diagnosis of TC is mainly based on the radiographic findings, the patient's biochemical profile, and the medical history plus differentiating the condition from its mimics.
CONCLUSION: TC should be considered in the differential diagnosis of any soft tissue calcification.

1. Introduction

Tumoral calcinosis (TC) is a rare benign condition characterized by extensive nonosseous calcification within the periarticular soft tissues of large joints, such as hip, elbows, shoulders, and rarely foot [1–3].

TC has a primary idiopathic form, but can also be found in a variety of disorders such as end-stage renal disease, hyperparathyroidism, vitamin D toxicity, and scleroderma [2]. TC can affect all the age groups, but is most commonly found in adolescence [4]. It mainly manifests as painless, firm, and mobile mass in periarticular soft tissue that may interfere with joint function when large [5].

TC can be mistaken for osteosarcoma, chondrosarcoma, myositis ossificans, and other conditions [2,4]. As this case demonstrates, TC should be considered in the differential diagnosis of any soft tissue calcification. In this report, we present a rare case of primary TC of the foot in a 76-year-old female. We obtained written informed consent for publication of the case report from the patient.

2. Presentation of case

A 76-year-old Caucasian female patient was referred for evaluation of a massive enlargement over her left heel progressing from past 10 years. She reported minor pain and discharge of a milk-like fluid from the mass. She had no constitutional symptom including weight loss, fever, chills, fatigue, decreased appetite, or night sweats.

There was no history of trauma, renal, or rheumatologic diseases. She was referred to a rheumatologist, who found no underlying rheumatologic diseases. Her family history was negative for similar complaints. On physical examination, her heel was swollen, warm, erythematous, and moderately tender. No neurovascular deficit and involvement of lymph nodes were seen. There was a discharging ulcer on the dome of the mass. Bacterial culture of the aspirated fluid revealed growth of penicillin-resistant *Staphylococcus aureus*.

Laboratory investigation showed: serum calcium 8.4 mg/dl (normal range: 8.6–10.6), serum phosphate 3.3 mg/dl (normal range: 2.5–5), and parathyroid hormone (PTH) 38 pg/ml (normal range: 10.4–65). No abnormality of renal or hepatic function was detected.

Radiography revealed a well-defined multilobulated calcification in the juxta-articular area of calcaneus with no evidence of bony erosion or fracture (Fig. 1).

Based on the clinical and radiologic findings, a diagnosis of tumoral calcinosis was made. The patient underwent excisional biopsy. A direct plantar incision was used. Through the incision of the superficial fascia, the mass was seen surrounded by a fibrous capsule. Excision revealed a multilobulated yellowish mass and led to extrusion of a thick, pus-like fluid (Fig. 2).

Pathology report confirmed the initial diagnosis of TC. The mass was divided by dense fibrous septa and consisted of nodules containing calcified material and giant cells. After the surgery, she was admitted for empirical antibiotic therapy. After 7 days of short leg

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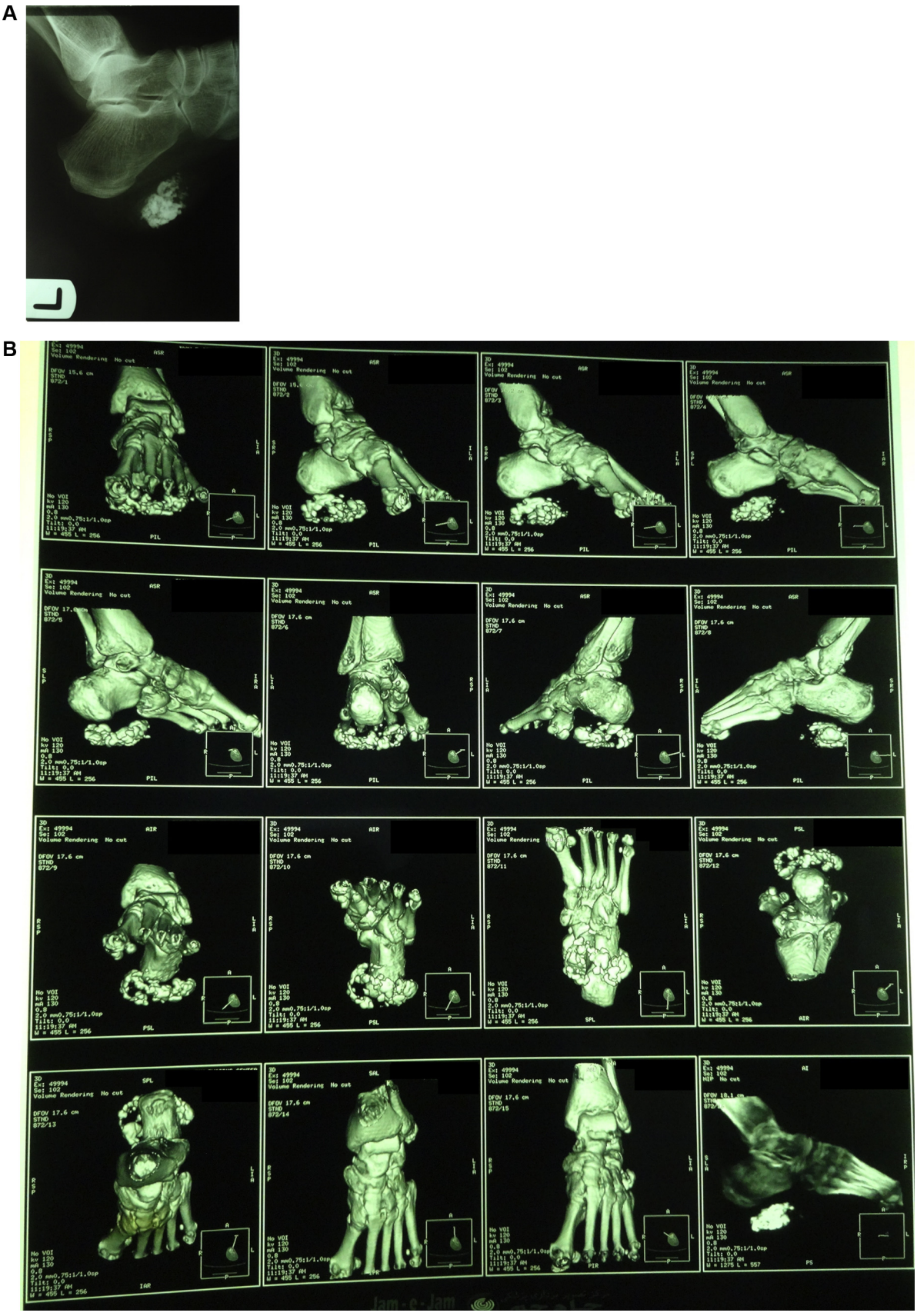

Fig. 1. Plain radiography (A) and 3D computed tomography, (B) showing a calcified nodular mass in the juxta-articular region of calcaneus.