Case report 734

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Radiological study

Fig. 1. Radiologically, the right foot shows erosion of the 3rd metatarsal shaft distal to the middle third of this bone. The lesion appears to arise in the adjacent soft tissues and, because the zone of transition is narrow, has the appearance of a benign process.

Clinical information

A 37-year-old man was referred to the orthopaedic clinic with a 5-year history of a painless swelling on the dorsum of his right foot. The original diagnosis was a ganglion, but no treatment was given. Over the 6 months prior to the referral a second swelling had developed adjacent to the first, but the foot remained free of pain. The patient was clinically well and an active sportsman.

Physical examination showed a firm swelling 5 × 3 cm arising from the right third inter-metatarsal region dorsally. The swelling appeared to be in three parts and was nontender. No regional lymphadenopathy was present. A radiograph (Fig. 1) showed an area of well-demarcated erosion of the lateral aspect of the third metatarsal shaft.

An operation was performed.

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Diagnosis: Fibroma of tendon sheath eroding 3rd metatarsal bone

At operation, a well-encapsulated, firm, fleshy, multilobular, whitish tumour was excised from the soft tissues adjacent to the 3rd metatarsal. It was firmly attached to both tendon sheath and periosteum. The adjacent third metatarsal was irregularly scalloped on the lateral surface, but the bony texture appeared normal. Two years after the surgical procedure the patient was asymptomatic.

Discussion

Fibroma of tendon sheath is an uncommon tumour, considered to be either a reactive fibrosing process or a benign neoplasm [2, 7]. The entity was first described by Geschickter and Copland [3] over 40 years ago, and a series of 138 cases was reported by Chung and Enzinger [1]. It is usually attached to a tendon or tendon sheath, and in this latter series 98% of lesions were in the extremities, the majority being in the hands, fingers, and wrists. The tumour appears to be most common in adults between 20 and 50 years of age and is noted more than twice as often in men than in women. The tumour is characteristically small and lobulated, macroscopically resembling the much more common giant cell tumour of tendon sheath. Microscopically, there are scattered fibroblasts, narrow vessels, and abundant, markedly hyalinised, eosinophilic dense collagenous material [2]. The differential diagnosis includes a wide range of soft-tissue tumours, although the location and the patient’s age narrow the possibilities. Recurring digital fibroma, for instance, occurs in the fingers and toes and may erode bone but is confined to childhood, as is juvenile aponeurotic fibromatosis [7].

In the present case, the main differential diagnosis would mainly include giant cell tumour of tendon sheath, but other extrasosseous lesions that cause pressure erosion rather than infiltration include both benign and malignant nerve sheath tumours (e.g., fibrosarcoma, rhabdomyosarcoma [2, 5], clear cell sarcoma [6], epithelioid sarcoma, fibrous xanthoma, glomus tumour, skin adnexal tumours and extraosseous ganglion [7]).

As Resnick and Niwayama point out ([7], p 4237), “Smooth resorption of cortical bone is more indicative of the proximity of a soft tissue process to subjacent bone than of its nature. The presence of sclerosis around an osseous defect suggests a slowly evolving process and is more typical of benign neoplasm.”

Considerable variation exists in the relative degrees of soft-tissue and bone components in such conditions as metastases and plasma cell myeloma. These disorders may produce large soft-tissue components with only minor bone destruction; other soft-tissue conditions, such as synovial sarcoma, may be associated with a large amount of bony abnormality [4].

We could not find a previous report of bone erosion by a fibroma of tendon sheath. By contrast, erosion of bone by giant cell tumour of tendon sheath – the chief differential diagnosis here – is a well-recognised phenomenon, and the findings in the present case may lend some support to the concept that fibroma of tendon sheath represents an evolution from giant cell tumour.

This case, although unusual, illustrates the fact that fibroma of tendon sheath enters the differential diagnosis of a soft-tissue swelling associated with radiological evidence of well-defined bone erosion in an extremity.

In summary, a case is presented of a 37-year-old man with an extrinsic lesion originating in the soft tissue adjacent to the 3rd metatarsal and smoothly eroding the adjacent bone. The operatively confirmed diagnosis of fibroma of tendon sheath was sur-

Pathological studies

Fig. 2. Macroscopic appearance: cut section shows a well-encapsulated, lobulated, uniformly grey appearance of the lesion

Fig. 3. Microscopic appearance: moderately cellular fibrous tissue nature of the nodule showing one mitotic figure (×40)