CASE REPORT

Thorn-induced pseudotumour of the fibula

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Accepted 26 April 2014

SUMMARY

Foreign body granulomas are common in the hand and foot. Diagnosis of the same is often delayed or missed, especially in unusual locations and in the paediatric age group. Radiographs usually reveal an osteolytic lesion with absence of periosteal reaction and non-metallic foreign bodies are not visualised in plain radiographs. An ultrasound and MRI can delineate the foreign body. Clinical and radiological presentation mimics that of a tumour and hence is rightly called pseudotumour. We present a case of thorn-induced pseudotumour of the fibula in a 5-year-old boy.

BACKGROUND

A painless swelling of the bone without trauma or infection with an osteolytic appearance on radiograph is usually investigated for neoplasm. Tumour-like conditions must, however, be borne in mind. Our patient presented with features of a tumour and was found to have a thorn-induced abscess.

CASE PRESENTATION

A 5-year-old boy presented with a swelling and infrequent, dull aching pain over his left-lower leg for 7 months. There was no history of fever or any other associated systemic symptoms. He was weight bearing with minimal discomfort. There was no history of previous injury. He did not seek any medical treatment before presenting to us.

A 4×3 cm sized firm ovoid swelling was present on the lateral aspect of the left leg, just above the lateral malleolus. Swelling was tender with associated minimal fluctuation. Ankle movements were normal.

INVESTIGATIONS

A plain radiograph revealed a cylindrical osteolytic lesion (4×1 cm) with sclerotic margin of the distal one-third fibular diaphysis with sclerotic margins and a periosteal reaction (figure 1). MRI did not demonstrate neoplasia, but had evidence of a foreign body; T1-weighted and T2-weighted images revealed a hypointense linear structure passing through soft tissue and distal portion of the fibula with associated break in the anterior and posterior cortex having sclerotic margins (figure 2).

Figure 1 Radiographs of leg showing a well-defined osteolytic lesion with sclerotic margins and a minimal periosteal reaction.

Figure 2 MRI (axial, coronal and sagittal views) showing a radiolucent zone in the fibula.

To cite: Challawar NS,
Sud V, Shah H. *BMJ Case
Rep* Published online:
[please include Day Month
Year] doi:10.1136/bcr-2014-
204115

Figure 3 Ultrasound image suggesting the presence of foreign body.

Ultrasound confirmed location and dimensions of the same, with abscess formation (figure 3). The preoperative haemogram showed an increase in lymphocytes (55%) and eosinophils (9.3%) with normal erythrocyte sedimentation rate values.

DIFFERENTIAL DIAGNOSIS

Considering the age of the child and the radiographic picture, a differential diagnosis of bone tumour including both benign (aneurysmal bone cyst) and malignant (Ewing's sarcoma) was kept.

TREATMENT

A surgical exploration revealed a subcutaneous abscess with a 4 cm long thorn-penetrating fibula (figure 4). Five fragments of the thorn were retrieved and the lesion was debrided. The post-operative period was uneventful.

OUTCOME AND FOLLOW-UP

The abscess yielded a sterile culture. Lymphocytes and eosinophils returned to normal values after surgery. At 3 months following surgery, the child was asymptomatic and walking with full weight bearing, without limp.

Figure 4 A 4 cm long thorn retrieved from the fibula.

DISCUSSION

Thorn-induced injuries mimicking bone tumour commonly involve the metatarsals and metacarpals.¹ They may present on radiographs as chronic osteolysis and in some cases with periosteal reaction,¹⁻³ or cystic changes.⁴

Fibular thorn-induced pseudotumours have been reported, either with a tumour-like appearance on radiographs² or with an abscess.³

Ultrasound, CT and MRI are the modalities that may be employed to detect foreign bodies.¹ When the history of trauma is not obtained and the foreign body inside the lesion is not recognised on radiographs, foreign body granuloma is easily mistaken for a soft tissue neoplasm.⁵ MRI or CT is often the investigation first performed in the absence of history of injury.⁶ Enhancement with intravenous gadolinium may be useful in the detection of surrounding reaction or cystic changes.⁴ Ultrasonography is a useful tool for accurate localisation with good sensitivity and specificity and may suggest the possible material nature of the foreign body⁷ but is operator dependent and deeper tissues may be difficult to visualise.⁸

In the present case, osteolysis, associated osteosclerosis, periosteal reaction with an abscess in the subcutaneous plane and a lack of history of penetrating injury made the diagnosis unclear. Foreign body-induced osteolysis must be considered as a differential diagnosis in such a case.

Learning points

- ▶ In children with chronic osteolysis and periosteal reaction, foreign body must be considered.
- ▶ History of thorn/wood fragment injury should be asked to rule out foreign body-induced abscess in such cases.
- ▶ MRI is usually performed first in the absence of such a history, but ultrasound is an efficient tool for accurate localisation, especially in the presence of an antecedent history of thorn prick.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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