CASE REPORT

Unusual solid mass in the popliteal fossa

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Dr Katharine Anne Smurthwaite,
katharine.smurthwaite@doctors.org.uk**SUMMARY**

We present a clinical case image of a 20-year-old man with a lump behind his knee. A radiograph taken in the emergency department demonstrated the classical appearance of an osteochondroma. Osteochondroma is the commonest skeletal neoplasm. Surgical excision results in symptom resolution in over 90% of patients.

BACKGROUND

Osteochondromas occur in less than 2% of the population and are rarely seen in the emergency department. As they have the potential to be part of a hereditary syndrome (hereditary multiple osteochondroma (HMO)), or become malignant, it is important for clinicians to recognise the typical appearance and manage effectively.

CASE PRESENTATION

A 20-year-old man presented to the emergency department with a 3-month history of a painless lump behind his left knee, gradually increasing in size. The patient reported a restricted range of movement and discomfort but no locking or giving-way. He denied a history of trauma, other similar lumps or a relevant family history.

Examination revealed a 1 cm fixed, bony, non-pulsatile circular mass in the superior aspect of the popliteal fossa. The right knee had no abnormality and both lower limbs had normal neurological function with palpable pulses.

INVESTIGATIONS

A lateral radiograph of the knee demonstrated an osteochondroma emanating from the posterior aspect of the left distal femur (figure 1). Subsequent MRI confirmed a 3 cm pedunculated osteochondroma on the postero-medial aspect of the left femur. It passed directly through the neurovascular bundle (popliteal vein medially, artery and tibial nerve laterally) with no evidence of malignant transformation or soft tissue invasion.

Figure 1 Lateral knee radiograph.

DIFFERENTIAL DIAGNOSIS

- Popliteal pseudoaneurysm
- Baker's cyst

TREATMENT

Surgical excision, involving both an orthopaedic and a vascular surgeon, was carried out due to the osteochondroma's proximity to the popliteal artery and nerve.

OUTCOME AND FOLLOW-UP

The patient made a full and uneventful recovery.

DISCUSSION

Osteochondroma is a benign tumour of bone and cartilage accounting for up to 50% of benign bone tumours and 15% of all bone tumours.^{1 2} Solitary osteochondromas, most commonly found at the knee or shoulder, occur in up to 2% of the population and malignant transformation to chondrosarcoma is rare, occurring in less than 1%.³ Multiple osteochondromas are found in the autosomal dominant syndrome of HMO. The prevalence of HMO is 1:50 000 with a male preponderance of 1.5:1. The transformation in HMO to malignant disease is higher than in solitary osteochondroma and is approximately 5%.³ The most frequently reported symptoms are pain, swelling, reduced range of motion, cosmetic abnormalities and bursitis.⁴ Although rare, there is an association with popliteal artery pseudoaneurysm.⁵ Surgical excision for symptomatic osteochondroma is generally successful with symptom resolution in over 90% of patients⁴ and a recurrence rate of less than 2%.³

Learning points

- Malignant transformation occurs in approximately 1% of osteochondromas.
- Osteochondromas may be familial—hereditary multiple osteochondroma; carrying a fivefold increased risk of malignant transformation.
- Neurovascular status should be checked due to the risk of nerve and vessel impingement. Additionally, there is an association with popliteal pseudoaneurysm.
- MRI is the choice of investigation to further define osteochondroma.

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