



“Doctor, what’s this lump?”

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Gill, an 11-year-old boy, presents with a lump near his left knee. There was bruising and swelling around his knee immediately after a hockey game approximately one month ago. One week ago he found that a lump had developed and showed it to his father who brought him to you. The lump is intermittently painful and sore only when he touches it.

Medical history

Gill’s medical history reveals the following:

- he is otherwise healthy,
- he has no allergies,
- he takes no medication and
- his family history is unremarkable.

Clinical investigations

Clinical investigations show:

- his complete blood count to be normal,
- full chemistries are unremarkable and
- an x-ray of left knee, including the distal femur, shows a solitary exophytic lesion along the the medial aspect of his distal left femur (Figures 1 and 2).

Physical examination

Gill’s physical examination is unremarkable, but an examination of his leg does reveal a visible fullness proximal to his left knee and, on palpation, he has a solid mass measuring approximately 5 cm by 4 cm on the medial aspect of his distal left femur.



Figure 1. Anteroposterior view.



Figure 2. Lateral view.

What’s your diagnosis?

- a) Osteochondroma
- b) Ewing’s sarcoma
- c) Osteosarcoma

Answer: A *Osteochondroma*

About osteochondroma

Solitary osteochondromas are thought to be the most common non-cancerous bone tumours. They account for 35% to 40% of all benign bone tumours. Solitary osteochondroma is a developmental abnormality of the bone. It occurs when part of the growth plate forms an outgrowth on the surface of the bone. This bone outgrowth may or may not have a stalk. When a stalk is present, the structure is referred to as pedunculated. When no stalk is present, it is referred to as sessile.

Symptoms

The most common symptom of an osteochondroma is a painless bump near the joints. The knee and shoulder are more commonly involved. Solitary osteochondroma can be found at the ends of any long bone and along the pelvic and shoulder bones.

If the stalk of a pedunculated osteochondroma breaks, pain and swelling may start immediately. An osteochondroma can be located under a tendon. When it is, snapping of the tissue over the tumour may cause activity-related pain.

An osteochondroma can be located near a nerve or blood vessel, such as behind the knee. When it is, there may be numbness and tingling in that extremity. A tumour that presses on a

blood vessel may cause periodic changes in blood flow. This can cause loss of pulse or changes in colour of the limb. Changes in blood flow resulting from an osteochondroma are rare.

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Asymptomatic lesions require no treatment and can be observed with initial radiographs and subsequent clinical examination.

Further investigations

Further investigation is indicated if the patient presents with a painful lesion or subsequently develops pain or a change in the size of a preexisting lesion. This may represent either a new mechanical symptom or malignant degeneration. MRI scans are very useful in this investigation.

Causes of pain

The most common causes of pain are:

- bursa formation,
- impingement,
- fracture of the stalk and
- malignant degeneration.

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Surgery

When surgery is recommended, it is best to wait until growth is complete (a mature skeleton by x-ray evaluation) before removing a solitary osteochondroma. This decreases the chance of the tumour growing back.

Surgery may be considered if the osteochondroma:

- causes pain with activity,
- puts pressure on a nerve or blood vessel, or
- has a large cap of cartilage.

The osteochondroma is removed at the level of the normal bone. Some of the inside of the bone may also be removed. **Dx**

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