# Surgical images: musculoskeletal

## Synchronous multifocal osteosarcoma

A 19-year-old white man presented with left knee pain and radiographs (Fig. 1). Open biopsy revealed high-grade osteogenic sarcoma. Bone scan showed another lesion involving the pedicle and transverse process of L1 (Fig. 2). CT and MRI were suggestive of osteosarcoma (Fig. 3). Biopsy revealed multicentric osteosarcoma.

After preoperative multidrug chemotherapy, the patient underwent resection of his distal femur with replacement with a massive prosthesis (Fig. 4). Tumor necrosis was found to be 99%.

He underwent 2 more cycles of chemotherapy followed by en bloc resection of his L1 tumour (Fig. 5). Tumor necrosis was found to be 100%. Anterior and posterior instrumentation was successful (Fig. 6).

The most recent follow-up, at 2 years, demonstrates excellent outcome with full extension of his left knee and flexion to 105°. He has very minimal functional limitation.

Synchronous multifocal osteosarcoma is most often thought to represent the phenomenon of bony metastasis, but in some patients, aggressive management leads to cure.

**Competing interests:** None declared.

**FIG. 1. Preoperative knee. Plain x-ray films revealing a blastic malignant lesion in distal femur that open biopsy verified to be high-grade osteogenic sarcoma.**

**FIG. 2. Bone scan demonstrating additional lesion involving the pedicle and transverse process of L1.**

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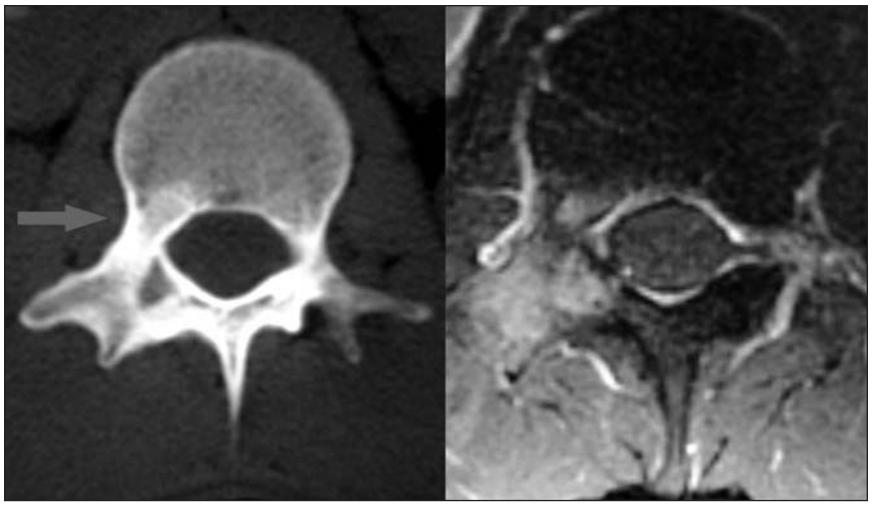

FIG. 3. Preoperative advanced spine. Axial CT and MRI scan of suspicious area of increased uptake on bone scan; additional biopsy confirmed the diagnosis of multicentric osteosarcoma.

FIG. 4. Postoperative femur. After preoperative chemotherapy, the patient underwent resection of his distal femur with replacement with a massive prosthesis.

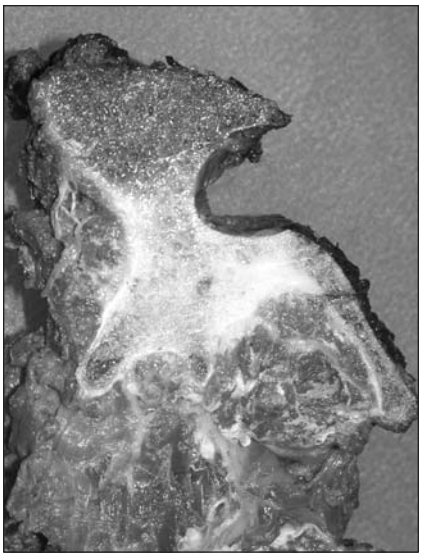

FIG. 5. Path specimen. Pathology specimen after en bloc resection, including part of the vertebral body as well as entire pedicle, transverse process and spinous process.

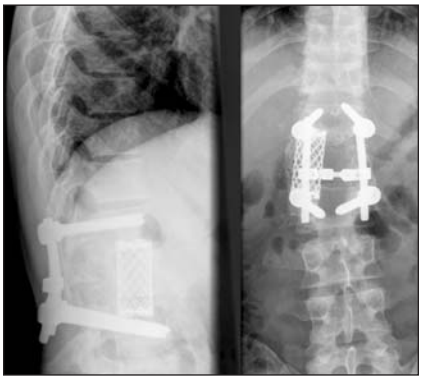

FIG. 6. Postoperative spine. Three months later, the patient had en bloc resection of his spinal lesion, followed by posterior instrumentation and anterior cage reconstruction.