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Sporadic osteochondroma of the cervical spine

Case illustration

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Osteochondroma is the most common benign tumor of bone, but axial skeleton involvement is uncommon and usually indicates a hereditary cause such as osteochondromatosis (hereditary multiple exostosis).[1] Approximately 7% of hereditary osteochondromas occur along the vertebral column, which is double the rate of vertebral column occurrences among sporadic cases.[4] We present a rare pediatric case of a large sporadic osteochondroma arising from the C-3 lamina.

A previously healthy 13-year-old girl with no family history of osteochondroma noticed a posterior neck mass that continued to enlarge over the following year. On examination, the mass was readily visible and nontender to palpation. The patient denied clumsiness of the hands or feet, paresthesias, or neck pain. No motor weakness, sensory disturbance, or hyperreflexia was noted. A lateral plain radiograph demonstrated a calcified mass arising dorsally from the posterior elements of the cervical spine between C-2 and C-4 (Fig. 1). Computerized tomography (CT) scans revealed that the mass was arising from the lamina of C-3 with bone remodeling of the C-2 and C-4 laminae (Fig. 2). Magnetic resonance imaging demonstrated a large multilobulated, cystic, and irregularly enhancing mass with calcified components, measuring 5.8 × 5.5 × 8.7 cm and causing mild cord compression at C3–4 (Fig. 2). The differential diagnosis for this rapidly growing spinal bone lesion included osteochondroma, osteoblastoma, osteosarcoma, and chondrosarcoma. The patient underwent a complete resection via a posterior midline cervical incision. At surgery, the tumor appeared lobulated, well-circumscribed, firm, and calcified (Fig. 3). The tumor and the C-3 lamina were removed. The results of a pathological examination were consistent with an osteochondroma. The postoperative CT scan demonstrated a gross-total resection with stable sagittal alignment.

Sporadic cases of osteochondroma present in patients with a mean age of 30 years, compared with 22 years of age at presentation in hereditary cases.[1] In this case, the tumor grew to an impressive size by the time the child reached the age of 13 years, which is unusually young for a patient with sporadic tumor. The location of the osteochondroma in this case, however, is quite typical. Cervical spine osteochondromas represent 50% of osteochondroma cases involving the vertebral column, and 50% of cervical spine cases occur at C-1 or C-2.[3] Osteochondromas arise most frequently from the posterior elements of the spine; however, any portion of the vertebral body can be affected.[5] These lesions rarely undergo malignant transformation in sporadic cases; however, in hereditary multiple exostosis, the incidence of degeneration to osteosarcomas or chondrosarcomas is 10%.

As in our case, most spinal osteochondromas do not cause neurological symptoms;[1] however, myelopathy and radiculopathy from neural compression have been reported.[2] Myelopathy is more common than radiculopathy and occurs more frequently in hereditary cases.[1] These lesions are slow growing, and therefore significant spinal cord compression can occur before these symptoms are recognized. Fortunately, neurological symptoms typically improve after resection.[3] Complete resection is curative and can often be achieved with a simple laminectomy, obviating the need for posterior fusion.

References

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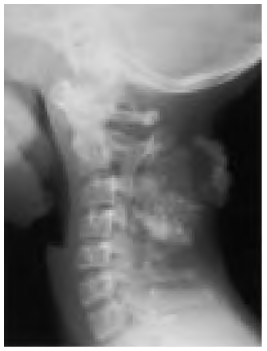

FIG. 1. Lateral cervical radiograph showing the calcified posterior spinal mass.

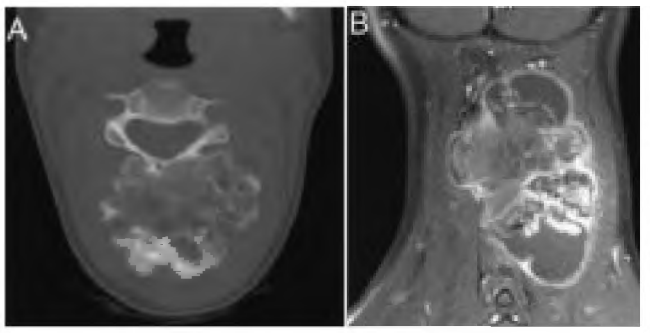

FIG. 2. Axial CT scan (A) and coronal T_1-weighted enhanced magnetic resonance image (B) demonstrating a large, cystic, multilobulated, calcified, heterogeneously enhancing mass arising from the lamina of C-3.

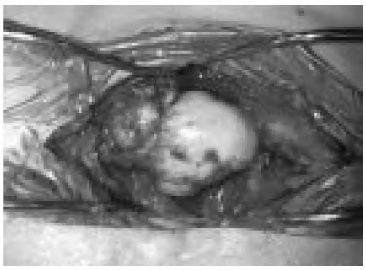

FIG. 3. Intraoperative photograph showing the large tumor.

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