Osteochondroma with compression of the spinal cord

A REPORT OF TWO CASES

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We report two cases of vertebral osteochondroma. In one patient a solitary cervical lesion presented as entrapment neuropathy of the ulnar nerve and in the other as a thoracic tumour associated with hereditary multiple exostoses producing paraplegia. We highlight the importance of an adequate preoperative evaluation in such patients.

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Benign cartilaginous tumours are commonly found in the appendicular skeleton but rarely in the spine.¹ Osteochondromas usually arise in the spine from the neural arch and compression of the spinal cord is seen more often in hereditary multiple exostoses than in a solitary lesion.^{2,3}

Case Reports

Case 1. A 33-year-old man presented with a nine-month history of neck pain and loss of grip strength of the left hand. Ten years previously a mass had been excised from the posterior area of his neck (Fig. 1). Examination showed tenderness over the left paraspinal area and there was clawing of the left hand. The grip was of power 3 on the MRC grading. He had no sensory impairment in the left arm. Radiographs showed a bony mass; CT and MRI revealed compression of both the cord and the C8/T1 nerve roots (Fig. 2). At operation a well-encapsulated mass was found arising from the posterior elements of C7 and T1 and causing compression of the C8/T1 nerve roots. It was removed and the nerve roots decompressed. Histological examination confirmed that it was a benign osteochondroma. Neck pain improved after operation but there was no significant recovery of grip. After two years MRI showed no evidence of recurrence.

Case 2. A 14-year-old girl was referred with a four-month history of weakness of both lower limbs and a one-month history of urinary incontinence. She had had antituberculous therapy for two months. There was left-sided tenderness of the lower thoracic spine but no deformity. She had multiple asymptomatic exostoses. The lower limbs were spastic but with intact sensation. Radiographs revealed an exostosis involving the neural arch of D8 (Fig. 3). CT and MRI showed compression of the cord (Fig. 4). Posterior decompression of D8 was performed and a large cartilaginous mass removed. Histological examination confirmed it to be an exostosis. She made a complete neurological recovery over a period of three months.

Discussion

Between 1% and 4% of solitary osteochondromas arise in the spine and 7% to 9% of patients with hereditary multiple exostoses develop a spinal lesion.⁴⁻⁶ Solomon⁵ reported an incidence of 9% of spinal osteochondromas in a series of 52 patients with hereditary multiple exostoses. All were asymptomatic. Compression of the spinal cord is an uncommon manifestation of osteochondroma.^{2,3,6,7} The neurological deficit is invariably the result of compression caused by an expanding lesion arising from the posterior elements. Less often, lesions causing neural compression originate from the vertebral bodies or heads of the rib. Anterior spinal osteochondromas in the neck can present as a pharyngeal mass with hoarseness or dysphagia.⁸

A search of the literature^{1,2,6-15} has shown that 117 cases of symptomatic spinal osteochondroma were reported between 1843 and 1997 either as solitary lesions or multiple exostoses (Table I). Pain was the commonest symptom in both groups but a palpable mass was found more often with solitary lesions. Both solitary and multiple osteochondromas affect males more frequently than females and patients with multiple exostoses presenting with a spinal lesion are usually younger (mean age 20 years) than those with a solitary osteochondroma (mean age 30 years).^{2,7} Myelopathy is predominantly seen with both multiple and solitary osteochondromas but is more common in the former.^{2,3,6,11-13} There was delay in presentation in both of our patients and delays of up to ten years have previously been reported.¹³ In our first patient, recurrence was attributed to

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Fig. 1a

Fig. 1b

Case 1. Radiographs showing a) a solitary osteochondroma at the cervicodorsal junction and b) recurrence ten years after excision.

Fig. 2a

Fig. 2b

Case 1. Axial CT showing the extent of involvement of the posterior element (a) and MRI showing compression of the cord and root on the left side (arrow) (b).

Fig. 3

Case 2. Radiographs showing a bony lesion involving the posterior elements of D8 (arrow).

Fig. 4a

Fig. 4b

Case 2. CT showing compression of the cord (a) and MRI sagittal reconstruction showing the cartilaginous component of the exostosis (b).

incomplete previous resection. We found that both CT and MRI were useful in confirming the diagnosis and in planning surgery. MRI delineated the extent of the compression of the cord and the cartilaginous component of the lesion and CT showed the origin of the osseous mass. An osteochondroma of the spine should be excluded in all patients with hereditary multiple exostoses who have spinal pain and in those who develop a neurological deficit.

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