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CASE REPORT

Intramedullary schwannoma of the cervical spinal cord

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KEYWORDS
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Summary Intramedullary spinal schwannoma is rare. Here, we report the case of a patient with solitary cervical intramedullary schwannoma that was detected by magnetic resonance imaging (MRI) and treated with total surgical resection. We have also reviewed similar cases reported in the literature. Our patient was a 44-year-old male tennis coach who presented with clumsiness, numbness, and weakness in all four limbs for 2 years. He exhibited Hoffman's sign and Lhermitte's sign, and showed sensory impairment below the C4 level and increased deep tendon reflexes; the muscle power of all four limbs was grade 4. MRI showed an intramedullary lesion with homogeneous enhancement at the C5–C6 level, approximately 3.6 cm in its greatest diameter. He underwent total resection of the tumor. Histopathological findings were consistent with the diagnosis of a benign schwannoma. The postoperative course was uneventful, and the patient was discharged without any change in his neurological status, apart from improvement in the strength of both his upper limbs. Intramedullary spinal schwannoma, although rare, is a benign tumor and, unlike intramedullary ependymoma and astrocytoma, can be cured by surgical treatment. Gross total resection can be achieved with minimal risks and a good clinical outcome.

1. Introduction

Spinal tumors occur with an incidence rate of 1.1 per 100,000 persons. Intramedullary spinal tumors comprise approximately 2–4% of all central nervous system neoplasms. The most common kinds of intramedullary

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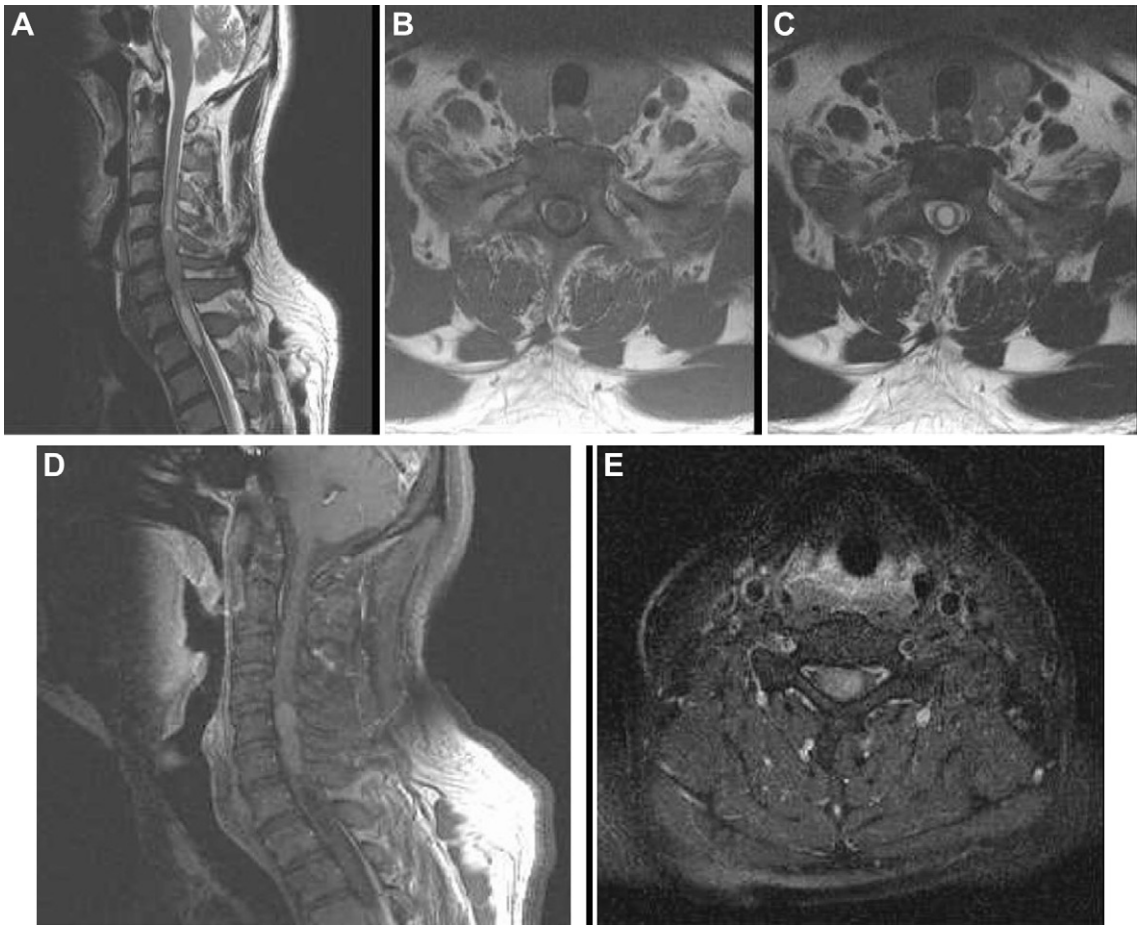

Figure 1 (A) Sagittal T2-weighted images show a mass lesion at the C5—C6 level with spinal cord edema. (B) Axial T1- and (C) T2-weighted images show a well-defined long lobulated cystic structure in the central region of C7—T1, suggesting a polar cyst. (D) Sagittal and (E) axial contrast-enhanced T1-weighted images show a sharply delineated ovoid enhancing mass within the cervical spinal cord at the intramedullary level of C5—C6, measuring approximately 3.6 cm in the greatest dimension.

tumors are ependymomas, astrocytomas, and hemangioblastomas.[1] Nerve sheath tumors (NSTs) constitute approximately 25% of all tumors arising in the intradural extramedullary space.[2] Approximately 65% of NSTs are schwannomas.[3] Intramedullary spinal schwannomas are rare; since their earliest report in 1931,[4] only 67 cases have been described. They represent 0.3—1.5%[5] of all primary intraspinal tumors, and their preoperative diagnosis based on routine imaging is difficult.[5–9] Here, we report the case of a patient with intramedullary schwannoma of the cervical spinal cord with histological confirmation and will review the literature with a focus on magnetic resonance imaging (MRI) features. Further, we will discuss the differential diagnosis and pathogenesis of these rare tumors.

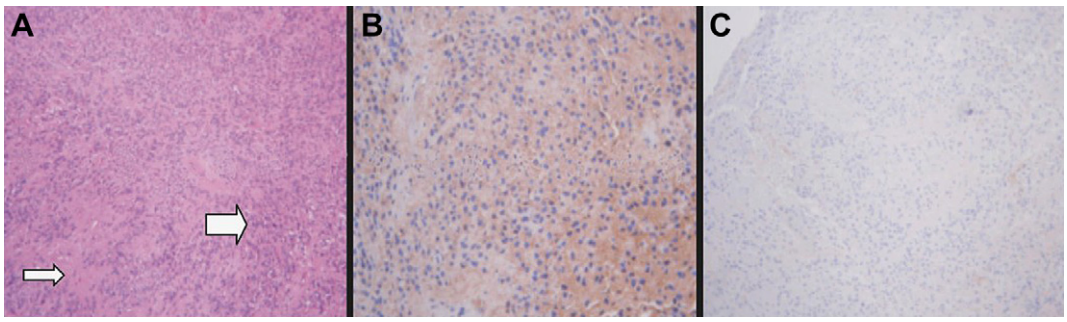

Figure 2 (A) Nerve-like tissue with Verocay bodies. Dense areas termed Antoni A (big arrow) and less dense areas termed Antoni B (small arrow) stained with hematoxylin and eosin (H&E) ×100. Immunoperoxidase staining shows tumor cell cytoplasm (B) positive for S-100 protein but (C) negative for glial fibrillary acidic protein.