Neuroradiology (2000) 42: 679–681

J. P. Mordani
I. U. Haq
J. Singh

Solitary fibrous tumour of the spinal cord

Received: 19 July 1999
Accepted: 6 November 1999

J. P. Mordani (✉)
Department of Radiology,
City General Hospital,
Stoke-on-Trent ST4 6QG, UK
e-mail: Jkishan@aol.com,
Fax: +44 1782 74 49 13

I. U. Haq
Department of Neuroradiology,
North Staffordshire Royal Infirmary,
Princess Road, Stoke-on-Trent, UK

J. Singh
Department of Neurosurgery,
North Staffordshire Royal Infirmary,
Princess Road, Stoke-on-Trent, UK

Abstract We report an intramedullary primary solitary fibrous tumour of the cervical spinal cord in a 33-year-old man. The tumour predominantly consisted of monomorphic spindle cells with a storiform pattern. MRI demonstrated an inhomogeneously enhancing cervical intramedullary tumour. The patient was well without recurrence 18 months after surgery.

Key words Spinal cord, neoplasm · Solitary fibrous tumour · Magnetic resonance imaging

Introduction

Solitary fibrous tumour is a rare tumour arising most commonly in the visceral pleura [1]. In recent years it has been described in other nonserosal sites such as liver [2], thyroid [3] and the orbit [4]. We report a case arising within the cervical spinal cord. As far as we are aware, this is only the second report of an intramedullary solitary fibrous tumour, a rare entity that may be considered in the differential diagnosis of intramedullary central nervous system neoplasm.

Case report

A 33-year-old man presented with an 18-months history of paraesthesiae, beginning in the hands and feet. He showed evidence of a myelopathy without radiculopathy, with sensory involvement extending from C5 to S2. Both legs were weak, with power 4/5 and increased tone and bilateral upgoing plantar responses. Anal tone and perineal sensation were normal.

MRI of the spinal cord was carried out at 1.0 Tesla, using a neck coil. Sagittal images through the cervical and upper dorsal spine were obtained. Axial gradient echo images were obtained through C4–6 and contrast-enhanced sagittal and axial images were also performed. MRI demonstrated a well-defined rounded intramedullary tumour at C5, lying dorsally, measuring about 12 mm in length and 10 mm in anteroposterior diameter, with some surrounding oedema. The tumour returned uniformly isointense signal on T1- (Fig. 1), but low signal on T2-weighted images (Fig. 2) and showed relatively inhomogeneous contrast enhancement (Figs. 3, 4).

At surgery there was an obvious fleshy tumour on the dorsal surface of the spinal cord with overlying feeding vessels. The tumour was predominantly intramedullary, with no attachment to the overlying dura mater or nerve sheath. Total excision was carried out, and the patient shows no clinical or MRI evidence of recurrence after 18 months.

Histology showed a tumour composed of uniform, collagen-forming spindle cells arranged in interlacing fascicles (Fig. 5a). There was no mitotic activity and no necrosis. In many areas there

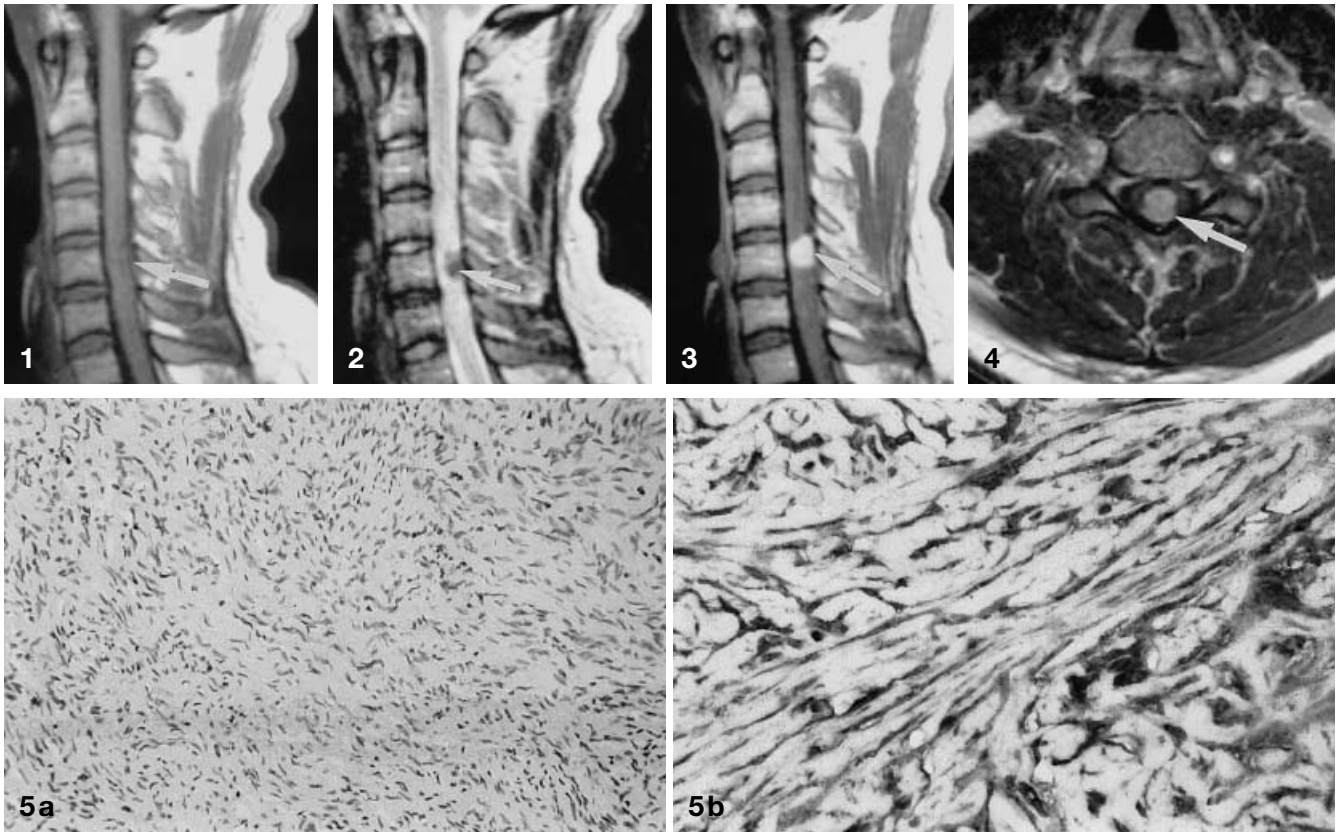

Fig. 1 Sagittal T1-weighted image showing slight expansion of the spinal cord at C5 *(arrow)*

Fig. 2 Sagittal T2-weighted image showing a dorsally placed, well-defined, low-signal intramedullary lesion at C5 *(arrow)* with a surrounding area of slightly high-signal oedema

Fig. 3 Sagittal contrast-enhanced T1-weighted image showing inhomogeneous enhancement of the lesion

Fig. 4 Axial contrast-enhanced image through C5 identifying the lesion as intramedullary *(arrow)*

Fig. 5 a Standard haematoxylin and eosin section (low power) showing the majority of tumour to consist of uniform spindle cells separated by bands of collagen. **b** High power view of the CD34-positive spindle cells

was hyaline fibrosis. A diagnosis of solitary fibrous tumour was made. This is supported by the immunohistochemistry which showed tumour cells positive for CD34 (Fig. 5 b) and negative for glial fibrillary acidic protein (GFAP), epithelial membrane antigen, cytokeratin and S100.

Discussion

Solitary fibrous tumours are rare spindle cell neoplasms which usually arise from mesothelial-lined surfaces, mainly the pleura [1] or peritoneum. They have also been described in extrapleural and extraperitoneal sites such as liver [2], thyroid [3], the orbit [4], salivary glands [5], tunica vaginalis testis [6] and the extra-medullary spinal compartment [7]. Its occurrence within the spinal cord has been described only once in the English literature [8]. This tumour appeared extramedullary on MRI and showed intense contrast enhancement simulating a meningioma. However, in our case the tumour, both on MRI and at surgery, was clearly intramedullary and the contrast enhancement was not as homogenous. Similar MRI appearances can be found with ependymoma, astrocytoma or metastasis. There are no absolute differentiating features on imaging.

The tumour had the typical morphological appearances on standard (haematoxylin & eosin) staining and the diagnosis was supported by immunohistochemistry. Solitary fibrous tumours are characteristically positive for CD34 and negative for GFAP [5], as in our case. Although solitary fibrous tumours are usually benign, malignant lesions have been reported [9, 10].

Acknowledgement We thank Dr. M. P. Carey, Consultant Neuropathologist, Queen Elizabeth Hospital, Birmingham for providing us with the histological diagnosis.

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