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Subacute Spinal Cord Compression Due to an Intramedullar Spinal Teratoma in a 53-Year-Old Female Patient: A Case Report

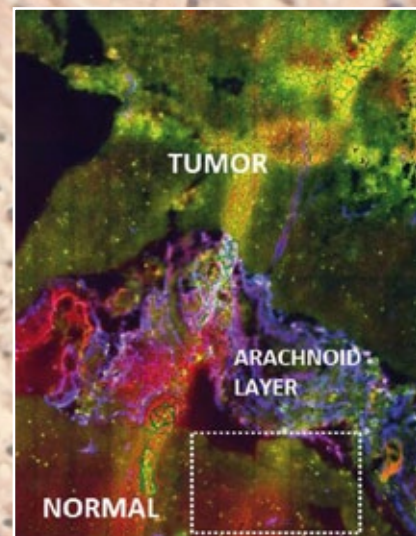
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Subacute Spinal Cord Compression Due to an Intramedullary Spinal Teratoma in a 53-Year-Old Female Patient: A Case Report

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Introduction

Spinal teratomas are a rare disease and constitute for 0.1–0.5 % of all spinal tumours [1, 2]. They can be divided into extra- and intradural and extra- and intramedullary teratomas according to their location [1, 2–5].

A teratoma is an encapsulated tumour with tissue or organ components resembling all 3 germ layers. Due to their capsule they are usually benign (mature) tumours. A malignant immature form can be found in male children. In adults, teratomas are more frequent in women.

We report the clinical and radiological characteristics of a 53-year-old woman with subacute progressive paraparesis. After spinal surgery, an intramedullary teratoma was histologically diagnosed.

Case Report

A 53-year-old woman complained about increasing lumbago over 10 days. On admission, she reported a bilateral L4 radicular pain syndrome, more prominently to the right. Neurological examination showed neither weakness of the lower extremities nor any sensory deficits. Lasegue's sign was negative on both sides. Medical history revealed the diagnosis of Guillain Barré syndrome in 2007 without any neurological sequelae.

Lumbar MRI, which was performed after admission, showed an intraspinal intramedullary tumour at level Th11/Th12, with an axial diameter of 3 cm and a sagittal diameter of 1.5 cm, associated with a myelopathy up to Th10. T₂-weighted images showed slightly inhomogeneous hyperintense signals. In the T₂ STIR sequences, the tumour appeared homogeneously hypointense. Administration of contrast medium exhibited a homogeneously strong enhancement. Altogether, the tumour had a lipoma-like appearance in accordance with its homogeneous tissue (Figure 1).

After admission, oral and intravenous analgesic treatments were administered. Initially, the patient responded well to this treatment of pain. Five days after admission, severe subacute progression of spinal signs and symptoms took place. Clinical neurological examination revealed a sensomotory transversal deficit at level Th11 including a maximal deficit of muscle strength of the left lower limb of 1/5 and the right lower limb of 3/5 (British Medical Research Council [BMRC] scale).

After paraparesis onset, intravenous dexamethasone treatment was established and neurosurgical intervention was decided on.

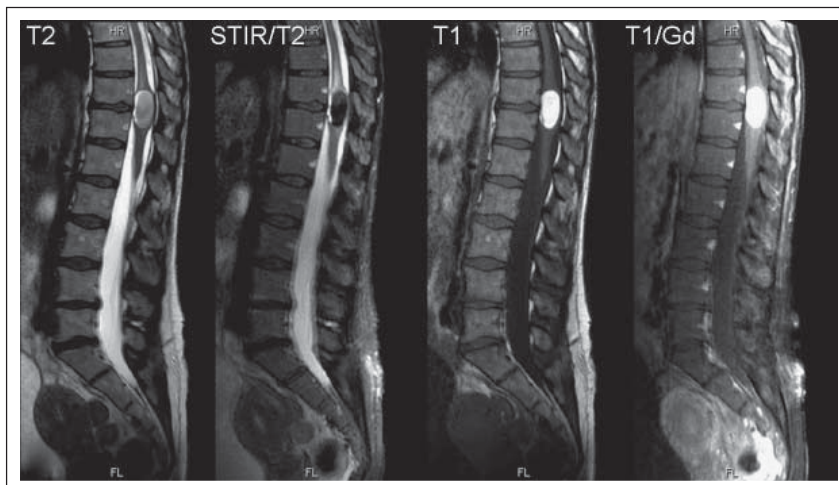


Figure 1. MRI of the thoracic and lumbar spine at admission, showing the teratoma at levels Th11/Th12.

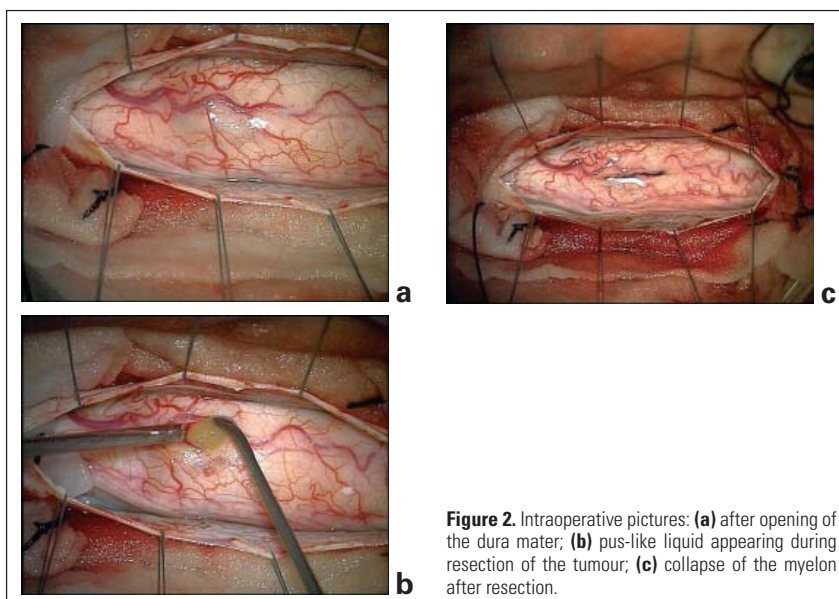


Figure 2. Intraoperative pictures: (a) after opening of the dura mater; (b) pus-like liquid appearing during resection of the tumour; (c) collapse of the myelon after resection.

With the guidance of intraoperative neurophysiological monitoring and ultrasound, standard laminectomy at Th11 and subsequent myelotomy were performed (Figure 2). The conus was enlarged and after myelotomy a muddy, milky, yellow and, to some extent, brownish fluid was drained (Figure 2b). The entire cyst was washed out and a biopsy specimen of the cyst wall was taken. Other types of tissue such as hair, bones, or skin were not found. We stopped further manipulation to avoid postoperative neurological deficit and closed the field.

Histopathological findings revealed a mature intramedullary teratoma consisting of mostly adipose tissue and also parts of dermal tissue.

After surgery, the profound weakness as well as the sensory deficit of the lower limbs subsequently improved. Neurological examination 10 days after operation revealed almost normal muscle function. Only a discrete weakness of the left foot extension remained.

After 3 weeks of neurorehabilitation, routine MRI follow-up investigation showed regular postoperative results (Figure 3). After 6 months, only a light hypaesthesia in dermatoma L4 on the left limb was found during clinical examination.

Discussion

Benign intramedullary teratomas in adults causing spinal cord compression with painful subacute paraparesis are rare. This case study reports clinical and neuroradiological features as well as treatment and outcome.

According to a review by Poeze et al [6], 31 out of 83 teratomas were of the intramedullary type, and 52 cases were intradurally extramedullary or extradurally located. The occurrence of spinal teratomas not associated with dysraphism is rare and more common in infants and adolescents than in adults.

Several authors have reported that the thoracolumbar region is most commonly affected, particularly in the area of the conus medullaris [6–9].

Most of the cases reported in the literature presented with weakness of the lower extremities, sensory changes, and reflex abnormalities, related to the site of the tumour [6]. Spinal pain syndrome was only found in 1/3 of the patients. However, a subacutely developing painful paraparesis in a patient with intramedullary teratoma has not been reported in the literature so far.

Our patient also had neurological signs and symptoms in accordance with the location of the teratoma. However, most patients described in the literature were younger and did not present with such a clinically fast progressive spinal cord compression.

Due to the rapid progression 5 days after admission we suspected haemorrhagic transformation of the tumour. This could not be verified intraoperatively. The cystic components were

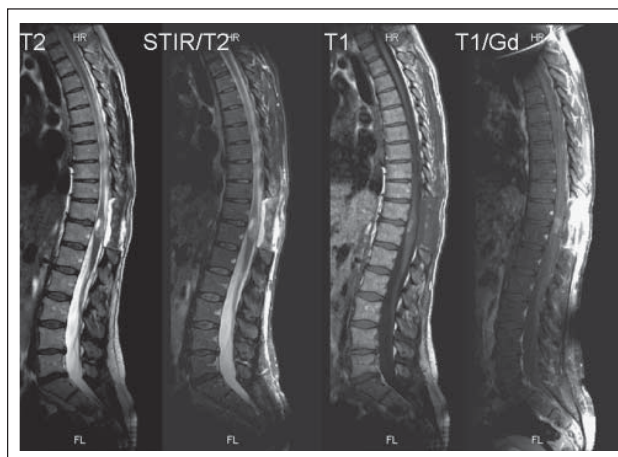


Figure 3. MRI of the thoracic and lumbar spine after partial resection.

to some extent brownish but not in the sense of a recent intracystic/intratumoural haemorrhage.

MRI is regarded as the gold standard diagnostic technique for the detection of the location of the teratoma and the degree of spinal-cord involvement. Concerning radiological features, usually mixed high- and low-intensity signals reflect the cystic and solid components of a teratoma [10]. In our patient's MRI, typical characteristics of a lipoma were mimicking a teratoma, which in retrospect represented the more lipomatous tissue of the tumour.

Complete resection of the tumour is the treatment of choice in spinal teratoma. Due to its intramedullary location only a biopsy of the cyst/tumour wall could be performed in our patient. In general, total resection of intramedullary spinal teratomas seems difficult due to potential neurological complications and frequent adhesions to the surrounding neural parenchyma [7–9, 11].

Conclusion

This is the case of an intramedullary spinal teratoma in a 53-year-old female patient who presented clinically with a rapidly progressive spinal cord compression. The radiological features of the lesion were mimicking a lipoma. Despite fast progression of clinical signs and symptoms surgical decompression and cyst evacuation of the teratoma led to a good clinical outcome. Due to a possible tumour recurrence we recommend annual clinical and radiological follow-up investigations.

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