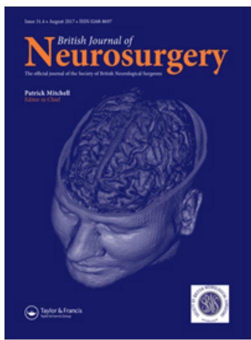

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SHORT REPORT

Spinal intramedullary mature cystic teratoma in an adult

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ABSTRACT
Spinal intramedullary teratoma is a rare tumour characterised with slow progression course. Although symptoms are generally mild, long-term complaints can be observed due to the slow progression. In this report, we discuss a 29-year-old female diagnosed as mature cystic teratoma in thoracolumbar junction.

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Adult spinal teratoma; intramedullary teratoma; mature cystic teratoma; spinal cord neoplasm

Introduction

Spinal intramedullary teratomas are rare spinal tumours mostly seen in paediatric patient group with the most common localisation of thoracolumbar junction.[1] Teratoma is originated from three germ cell layers.[2] Disorientation in the migration of primordial germ cells in the early embrionic stage is responsible in the pathogenesis of the disease. Additionally, it is considered that spinal teratoma is not neoplastic and disembriyogenic mechanisms has role on the pathogenesis. The incidence of spinal teratoma is rare and 0.15–0.18% of spinal tumours in all ages and 5–10% of all spinal tumours among paediatric patient group have been classified as teratomas.[3]

Case report

A 29-year-old female suffering from lumbar pain that had lasted for over four months, resistant to medical treatment and worsening in supine position was admitted to the hospital. In the neurological examination of the patient, paraspinal muscle spasm was detected in lumbar region, motor and sensorial deficit was not observed. Anal tonus was normal and urinary incontinence was not present. Routine laboratory examinations were in normal range. In the medical history of the patient surgery, severe trauma, congenital anomaly was not reported. The magnetic resonance imaging (MRI) of lumbar region revealed a heterogeneous, 25×15 mm mass in the thoracolumbar junction and showed significant compression effect in conus medullaris (Figures 1a, b).

The patient was underwent a resection of the tumour by means of a single level T12 total laminectomy. Following the dural incision through the tumour cyst wall, a yellow-coloured soft proteineous material was drained. Dissection of the solid component of the mass revealed tight attachment to the conus and extension to the intramedullary region. Part of the mass lying through the conus was resected by sharp dissection leaving as small as possible so as the prevent neurological deficit. Lumbar pain was relieved after surgery and mild parestesiae in both legs resolved after treatment with gabapentin for two months. No further neurological deterioration was observed. In the eighth-month follow-up control, enhanced contrast probably due to residual mass in the intramedullary region in MRI was detected (Figures 1c, d).

In the histopatological examination of the mass, cystic components surrounded with stratified squamouse epithelial cells and mucose, sebaceous glands, adiposites and vascular components surrounded with hyalinised fibrosis was observed. The pathological diagnosis was mature teratoma as immature and malign components were not detected (Figure 2).

Discussion

Although pathogenesis of the spinal teratoma is not clear, it is considered that it originates from the migration defect of primordial germ cells in the early stages of embriyogenesis.[1] According to an another theory, it originates from a large number of functional genetic disorders and deterioration in cellular interactions. As the spinal mature teratoma is slowly progressing tumour with low and slow malignity course, it is possible to detect the tumour in early stages prior to the development of any neurological functional disorders. Initial complaints of the patients are generally non-specific or relatively mild neurological complaints such as lumbar pain and radiculopathy. As spinal teratoma shows low progression, the most important diagnostic method in the early stage is MR imaging.[2] If destruction in the osseous components due to the tumour occur, direct graphy or CT imaging could be useful in the diagnosis with their indirect signs.

Surgery is the primary treatment option in spinal teratoma and total excision in the surgery should be encouraged. Total excision is a useful method in extramedullar teratoma without leading additional deficits, but it should not be performed in the treatment of teratoma with intramedullar component due to the risk of additional neurological deficits. Excision could be performed leaving a small remnant by sharp dissection and avoiding from bipolar coagulation in intramedullar region as much as possible. Previous

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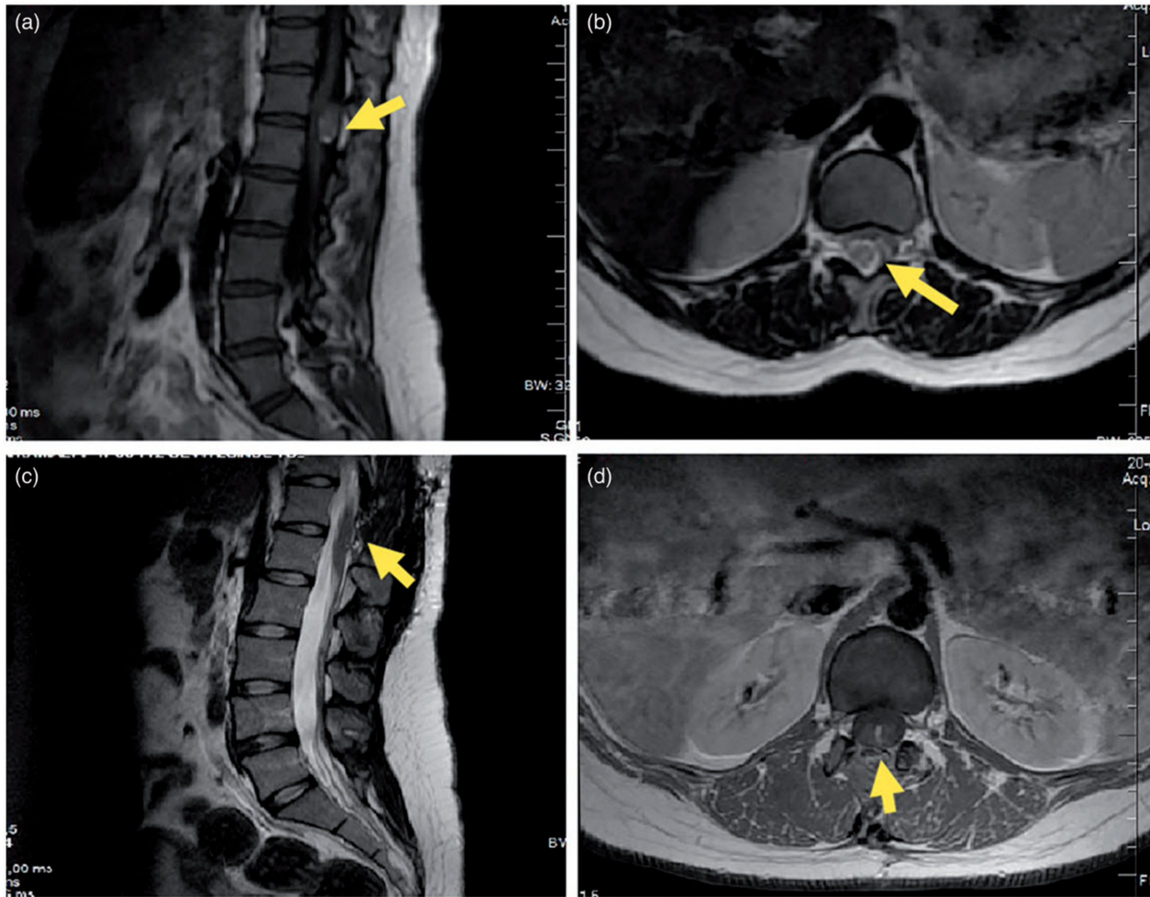

Figure 1. Pre-operative and post-operative lumbar magnetic resonance imaging scans of the lesion. Sagittal t1-weighted MRI partially contrast enhanced mass lesion at thoracolumbar junction (1a). On axial imaging, t2-weighted MRI shows thinned cord and infiltrated part of the lesion on left posterolateral side of the cord (1b). Post-operative MRI scans shows gross total resection of the mass and small contrast enhanced remnant at the operation area (1c,1d).

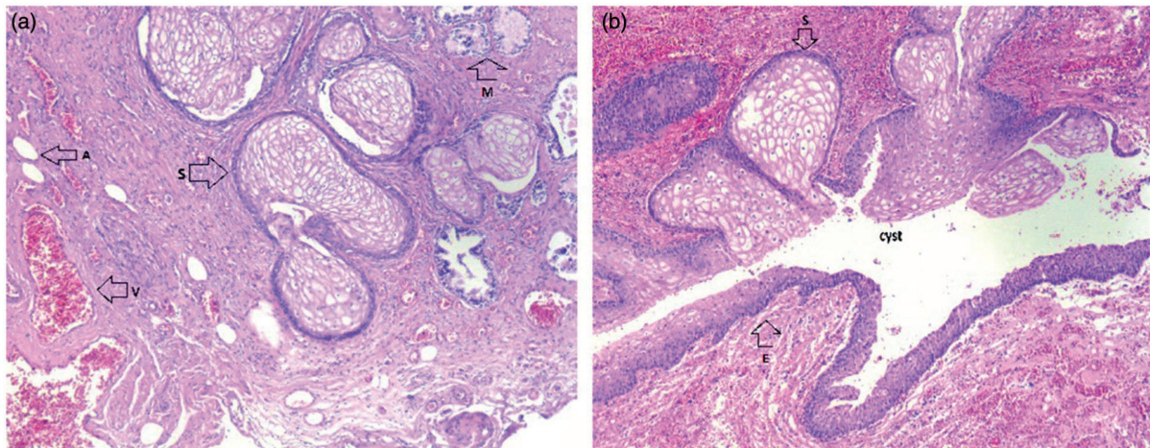

Figure 2. Hystologic examination of the lesion. (a) Section of the tumour which included mucous (M) and sebaceous glands (S), adipocytes (A) and vessels (V), surrounded by dense hyalinised fibrous tissue (H&E, ×50). (b) Histologic examination of the cyst. They were lined with stratified squamous epithelium (E) and contained sebaceous gland (S) in the wall (H&E, ×100).

reports indicate that recurrence rate of teratoma treated with total excision and subtotal excision is 9% and 11%, respectively. Patients should be followed up after surgery periodically by MR imaging prior to the development of additional neurological deficits.

The patient has consented to submission of this case report to the journal.

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consultancies, stock ownership, or other equity interest, and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

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