The Spine Journal 16 (2016) e59–e63

Case Report

Multiple melanocytoma of the thoracic spine: a case report and literature review

Yu-Bo Wang, MD[a], Wen-Jun Wang, MD[b], Hai-Tao Zhao, MMed[a], Wei Li, MMed[a], Tao Peng, MD[a], Xian-Feng Zhang, MD[a,*]

[a]*Department of Neurosurgery, First Hospital of Jilin University, 71 Xinmin St, Changchun 130021, Jilin, China*
[b]*Department of Orthopedics, China-Japan Union Hospital of Jilin University, 126 Xiantai St, Changchun 130033, Jilin, China*

Received 8 May 2015; revised 1 August 2015; accepted 14 September 2015

Abstract

BACKGROUND CONTEXT: Primary melanocytic neoplasms of the central nervous system (CNS) are rare tumors, and multiple localized melanocytoma are even rarer.
PURPOSE: This study aimed to report an unusual case of multiple melanocytoma of the thoracic spine and discuss the diagnosis and treatment of primary CNS melanocytoma.
STUDY DESIGN: This study used a clinical case report and review of the literature.
METHODS: Chart review and analysis of the relevant literature were carried out.
RESULTS: A 60-year-old man presented at our neurosurgery department with progressive truncal numbness spanning 3 months. Magnetic resonance imaging of the thoracic spine revealed two intradural extramedullary masses at T1 and T3–T4, respectively. Gross total resection of the lesions was performed. Postoperative positron emission tomography-computed tomography and magnetic resonance imaging revealed no residual tumor or recurrence.
CONCLUSIONS: We report a case of multiple primary spinal cord melanocytoma at the T1 and T3–T4 levels.

Keywords: Melanocytoma; Melanoma; Spinal cord; Thoracic spine; Tumor; Central nervous system

Introduction

Primary melanocytic neoplasms of the central nervous system (CNS) are rare tumors that present in diffuse or localized form; multiple localized lesions are even rarer [1]. Here, we report a case of multiple primary thoracic spine melanocytoma and discuss the preoperative diagnosis and treatment of primary CNS melanocytoma.

Case report

A 60-year-old man was admitted for progressive truncal numbness spanning 3 months. Physical examination revealed no evidence of cutaneous melanoma. Magnetic resonance imaging of the thoracic spine revealed two intradural extramedullary lesions at the T1 and T3–T4 levels, respectively. Both lesions were hyperintense on T1 and hypointense on T2, and showed homogeneous enhancement following the administration of contrast agent (Fig. 1). The patient underwent T1–T4 thoracic laminectomy for symptomatic improvement. Intraoperatively, the dural, leptomeningeal, and arachnoid layers were partly dark-stained. The neoplasms were dark and closely adhered to the dura. Following gross total resection of both masses (Fig. 2), we coagulated the dura closely adhered to the masses. Some of the dark-stained dura and the leptomeningeal layer that could be exposed adequately were coagulated using bipolar coagulation to prevent recurrence. Histopathologic examination suggested the diagnosis of intermediate-grade melanocytoma (Fig. 3). Light microscopic examination revealed tumor cells with intracytoplasmic brownish pigment and well-delineated nuclei. Mitotic count=2/10 high-powered fields. Immunohistochemical staining revealed that the lesion was positive for S-100 and Ki-67 but negative for epithelial membrane antigen and glial fibrillary acidic protein. Postoperatively, the truncal numbness was markedly relieved, but the patient refused

FDA device/drug status: Not applicable.

Author disclosure: ***YBW:*** Nothing to disclose. ***WJW:*** Nothing to disclose. ***HTZ:*** Nothing to disclose. ***WL:*** Nothing to disclose. ***TP:*** Nothing to disclose. ***XFZ:*** Nothing to disclose.

* Corresponding author. Department of Neurosurgery, First Hospital of Jilin University, 71 Xinmin St, Changchun 130021, Jilin, China. Tel.: +86 158 0430 1460; fax: +86 0431 8187 5719.

E-mail address: xianfeng_zhangjl@163.com; wangyubowyb@163.com (X.-F. Zhang)

http://dx.doi.org/10.1016/j.spinee.2015.09.036
1529-9430/

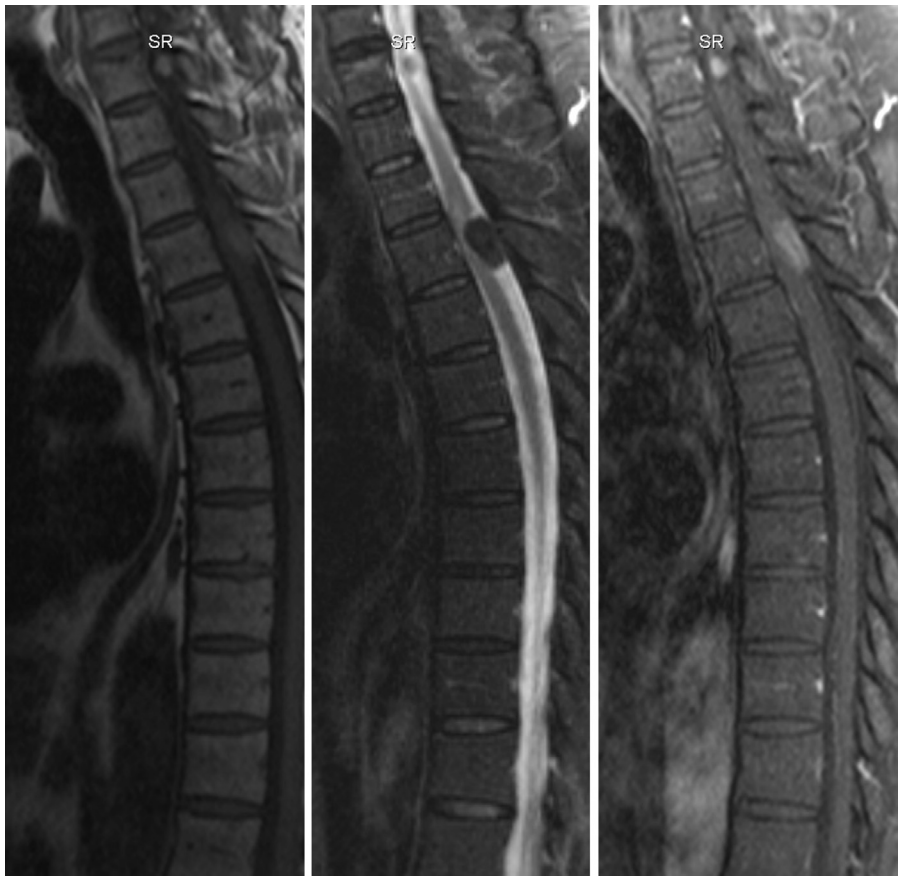

Fig. 1. Preoperative MRI images. Preoperative MRI of the thoracic spine revealed two intradural extramedullary lesions at the T1 and T3–T4 levels. Both lesions were hyperintense on T1 (Left) and hypointense on T2 (Middle); following the administration of contrast agent, they showed homogeneous enhancement (Right). MRI, magnetic resonance imaging.

radiotherapy. He was discharged a few days later, and he resumed his normal activities. Positron emission tomography-computed tomography (PET-CT) conducted 4 months later confirmed the diagnosis of primary CNS neoplasms and that the lesions had been completely resected. Follow-up magnetic resonance imaging revealed no residual tumor or recurrence 19 months after surgery (Fig. 4).

Discussion

Primary melanocytic neoplasms of the CNS that arise from leptomeningeal melanocytes can be diffuse or localized. This group consists of a spectrum ranging from well-differentiated melanocytoma to its overtly malignant counterpart, melanoma [2]. In 2010, Liubinas et al. reviewed the English literature on primary melanocytic neoplasms of the CNS [1] and found that multiple lesions are very rare. To the best of our knowledge, this is the fourth report in English of multiple localized melanocytoma; Table 1 lists the previous reports. Ali et al. [4] reported a case of multifocal meningeal melanocytoma; they had assumed it was a new pathologic entity or the result of leptomeningeal seeding. Huang et al. reported a 24-year-old man with multiple spinal cord melanocytoma at the cervical and upper thoracic spine: the histologic findings of the tumor were consistent with intermediate-grade melanocytoma [5]. In the present case, we confirmed the diagnosis of intermediate-grade melanocytoma according to the World Health Organization classification [6].

Table 1
The English literature on multiple localized melanocytoma

Authors	Year	Age	Gender	Location	Resection	Follow-up	Status
O'Brien et al. [3]	1995	13	M	Thoracic spine	Incomplete	3.5 years	Well
Ali et al. [4]	2009	31	M	Bilateral cerebellopontine angle and thoracic spine	Incomplete	A few weeks	Death
Huang et al. [5]	2011	24	M	Cervical and thoracic spine	Incomplete	2 weeks	Well
Current case	2014	60	M	Thoracic spine	Complete	19 months	Well