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CASE REPORT

Melanotic cyst of L5 spinal root: A case report and review of literature

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ABSTRACT

Till date, 85 cases of melanotic schwannoma and 11 cases of spinal root melanoma have been reported in literature. We are reporting a case of a 45-year-old lady who presented with primary low back pain, and magnetic resonance imaging of lumbo-sacral spine showed at left L5-S1 foraminal lesion extending to the para-spinal compartment. Hemi-laminectomy, facetectomy, and excision of the lesion were done. It was primarily a cystic lesion with attachment to the exiting spinal nerve root. Histopathology of the cyst wall showed a fibro-collagenous stroma with no specific cell lining containing melanin pigment suggestive of a melanotic cyst. The patient was completely relieved of the back pain, and had no recurrence over a follow-up period of one and half years. This case is probably the first reported predominantly cystic, pigmented lesion, affecting the spinal root.

Key words: Melanoma, melanotic, nerve sheath tumor, paraspinal, schwannoma

Introduction

Melanotic lesions of the spinal roots are rare, and the reported lesions most often are either primary melanoma arising from the pia-arachnoidal melanocytes or pigmented schwannoma with intra-cytoplasmic melanosomes. Pigmented cystic lesions with characterless cyst capsule may be the result of extensive necrosis or cystic degeneration of either a melanoma or a melanotic schwannoma.[1-3] We are reporting probably the first predominantly cystic pigmented lesion affecting the spinal root.

Case Report

A 45-year-old hypertensive woman presented with history of low back pain for past one week which was abrupt in onset and severe in nature. The pain was non-radiating and confined to low back on the left side, affecting her activities of daily life. On examination, she had paraspinal spasm without any neurological deficits. There were no neurocutaneous markers. Magnetic resonance imaging (MRI) of lumbosacral spine revealed a well defined extra-spinal oval lesion measuring 2.1×1.5×1.8 cm in the left L5-S1 neural foramen causing widening of the canal with a large globular paraspinal mass. The lesion was hypointense on T1 and T2 weighted images with heterogeneous contrast enhancement suggestive of spinal nerve sheath tumor [Figure 1]. Left hemilaminectomy and complete facetectomy was done to visualize a jet-black cystic tumor with thin capsule arising from L5 root in the right neural foramen with para-spinal extension [Figure 2]. As the tumor was being dissected the cyst opened up, which revealed a black cyst fluid with shimmering particles in it. The cyst wall was dissected from the L5 nerve root and removed gross totally. Histopathology revealed small fragments of fibro-collagenous stroma and ganglion cells with no specific cell lining. Cyst contained brownish black pigment that was bleached with melanin bleach and was negative for Pearl's stain [Figure 3]. Post-operatively, patient was completely relieved of her low back pain. She has been on follow-up for more than one and half years with no recurrent symptoms and repeat MRI spine showed no recurrence of lesion.

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Discussion

Melanotic schwannoma, pigmented neurofibroma, meningeal melanocytoma, malignant melanoma, and pigmented nevus are the reported melanotic lesions affecting the spinal nerve roots.[4-7] Melanotic schwannoma, a variant of schwannoma, is characterized by the presence of spindle or epitheloid cell with pigmented granules.[6] Kasnatikul, in 1989, had reported a case of spinal melanotic arachnoid cyst, which was characterized by a melanotic cyst, lined with a cuboidal epithelium which was in continuation with the leptomeninges.[8] In the case we have reported, there was a characterless pseudocapsule lined

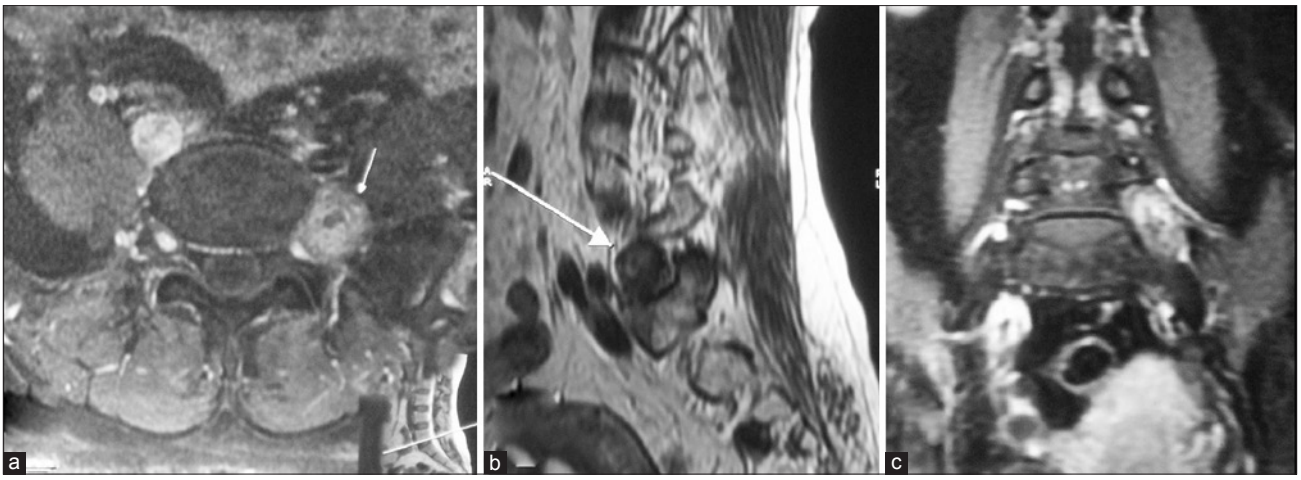

Figure 1: MRI lumbo-sacral (a) axial contrast image, shows an extra-spinal heterogeneously contrast enhancing globular lesion with foraminal extension and widening, (b) MRI T1WI sagittal section at the level of left neural foramen shows a hypointense lesion arising at that level, (c) MRI T1WI contrast image of coronal section at the level of neural foramen shows heterogeneously enhancing lesion arising from the left L5 nerve root

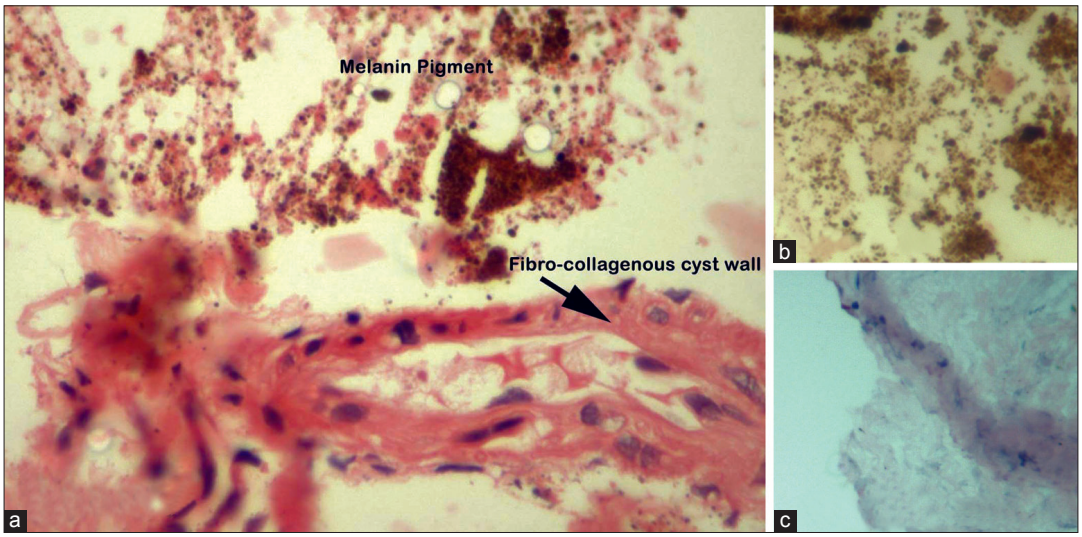

Figure 3: (a) H & E staining of the cyst wall shows fibro-collagenous stroma with interspersed ganglion cells and melanin pigmentation in the cyst, (b) pearls stain was negative for iron, (c) melanin bleach showed fibrocollagenous cyst wall devoid of pigmentation

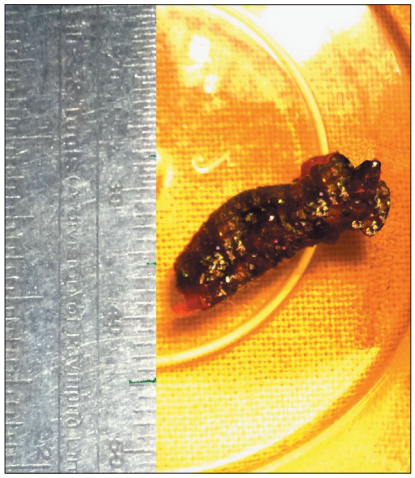

Figure 2: Piece of the pseudo-cyst wall covered with jet-black shimmering coating

by fibrocollagenous layer with no evidence schwannomatous elements. These tumors are more often associated with neurocutaneous syndromes such as neurofibromatosis or Carney complex as opposed to this reported case, where there were no neurocutaneous stigmata. Melanotic lesions are reported to have a more aggressive course when compared with their amelanotic counterpart.[6,9,10] Cystic melanotic lesions reported are primarily either melanoma or schwannoma that have undergone cystic degeneration or hemorrhagic transformation.[1-3,11-13] Surgical excision is the accepted treatment of choice in most cases, except for recurrent and malignant lesions.[14,15] These have higher risk of malignant transformation and metastasis; hence patients have to be followed-up periodically for recurrence of symptoms and also look out for other complaints suggestive of metastasis.[2,16] In this case, the lesion had undergone cystic transformation to

the extent that we could not categorize the lesion. The cyst wall showed melanin pigmentation with fibro-collagenous stroma with some ganglion cells without a definitive cell lining. The natural history of this sort of lesion is uncertain and has to be followed-up for a longer period due to its potential for malignant transformation and metastasis.

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