

Intradural Lipoma Without Spinal Dysraphism With Spinal Cord Involvement

B Suresh, K Anasuyamma, M Uma, D Madhu, M Ramanappa

Citation

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Abstract

MRI is an excellent modality to demonstrate fat in the lesion. It revealed an intradural tumour at C6 to D2 level which is hyperintense on T1 and T2w images and suppressed on fat suppressed and STIR images.

KEY MESSAGE

MRI is an excellent modality to demonstrate fat in the lesion. It revealed an intradural tumour at C6 to D2 level which is hyperintense on T1 and T2w images and suppressed on fat suppressed and STIR images.

INTRODUCTION

Intradural lipomas are rare congenital tumours accounting for about 4% of spinal lipomas. Spinal lipomas usually associated with spinal dysraphism such as spina bifida, lipomeningocele. Intradural lipomas without spinal dysraphism are still a rare entity. MRI clearly demonstrates the fatty content and the extent of tumour. Here is a case report of intradural lipoma without spinal dysraphism and involving spinal cord.

CASE HISTORY

A 35 yr old man presented with gradually increasing weakness of both lower limbs. There is no evidence of bladder and bowel dysfunctions. On examination there is decreased power in both lower limbs and decreased sensations below D3 level. MRI of the cervical and dorsal spine showed an intradural lesion extending from C6 to D2 level measuring 50.2 X 8.7 mm. The lesion is posterior to spinal cord and compressing and displacing it anteriorly. The lesion is hyperintense on T1W images (Figure 1) and on T2W images (Figure 2), suppressed on fat suppressed (Figure 3) and STIR images (Fig 4) indicating its fatty nature.

Figure 1

Figure 1: Sagittal T1w image showing hyperintense intradural lesion posterior to spinal cord extending from C6 TO D2 level

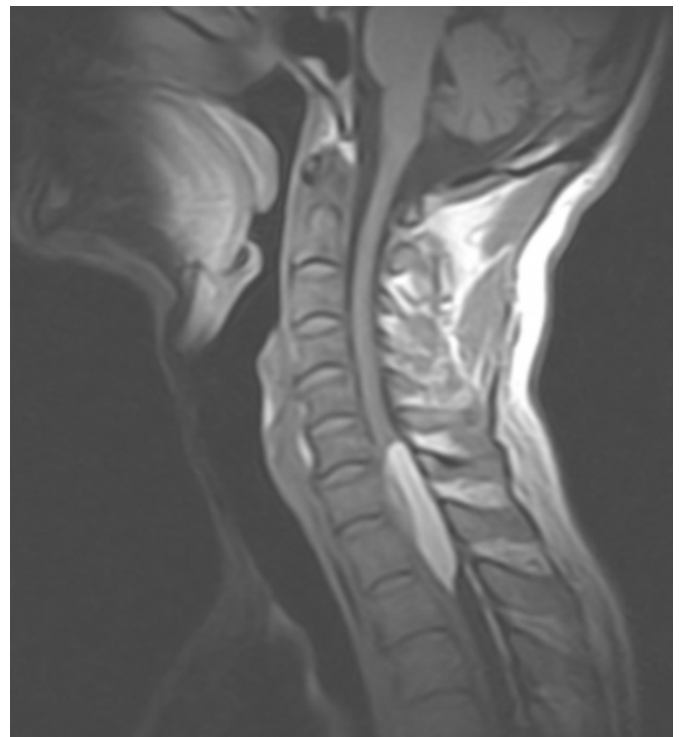


Figure 2

Figure 2: Sagittal T2w image the lesion is hyperintense to skeletal muscle and similar to subcutaneous fat.

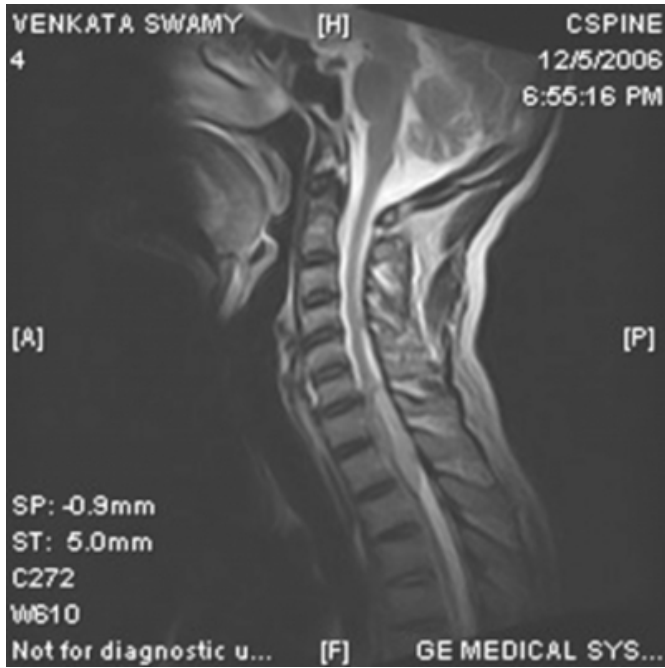


Figure 3

Figure 3: Sagittal fat suppressed image showing signal suppression of the lesion similar to subcutaneous fat.

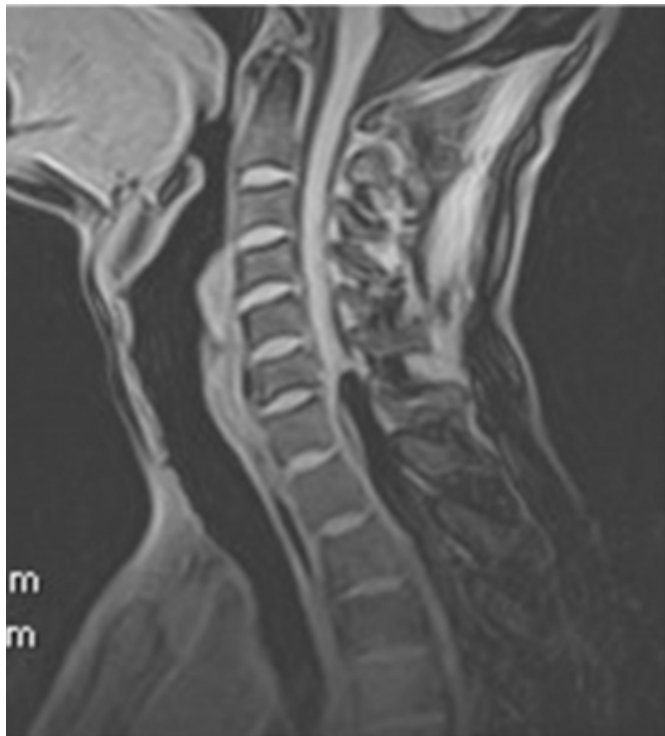


Figure 4

Figure 4: Sagittal STIR image showing suppression of signal of the lesion.



Intramedullary extension of the lesion is seen (Fig 5&6).

Figure 5

Figure 5: axial T2w image at the level of the lesion showing hyperintensity extending into the spinal cord with displacement of cord anteriorly indicating Intramedullary extension

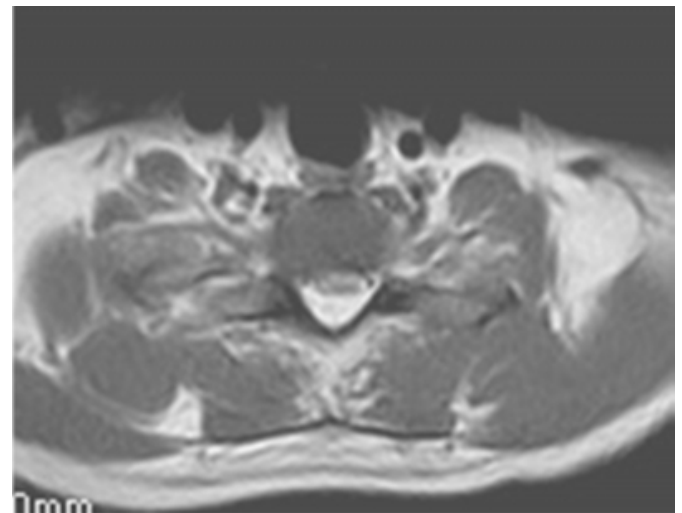
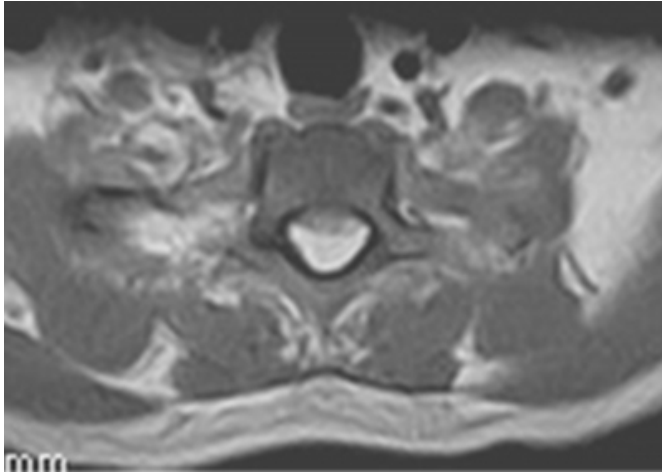


Figure 6

Figure 6: axial T2w image at the level of the lesion showing hyperintensity extending into the spinal cord with displacement of cord anteriorly indicating Intramedullary extension



There is no associated spinal dysraphism. The patient underwent laminectomy and partial resection of the lipoma.

DISCUSSION

In 1945 Ehni and Lore first described seven cases of intradural lipoma not associated with spinal dysraphism as a distinct entity. The origin of the intradural lipomas without spinal dysraphism has been an issue of debate. Many theories have been postulated as proliferation of adipose cells, deposition of fat in connective tissues or metaplastic differentiation of persisting embryonic meninges.

Intradural lipomas can be intradural, subpial or juxtamedullary in location. Most often occurs in young adults in second and third decades of life with no sex predilection. Upper thoracic and cervical regions are most commonly affected levels. The lesion is elongated in shape and may involve several segments. Since it most frequently located in the posterior aspect of spinal canal patients often presents with dorsal column dysfunction including ataxia and numbness of extremities.

Plain films of spine shows bone changes like scalloping, separation & thinning of pedicles and widening of spinal canal. Myelography demonstrates widening of spinal canal with high grade obstruction of contrast flow. CT has

improved the ability to identify lipomas on the basis of typical low density. MRI not only confirms the fat component of the lesion but also delineates its relationship with the adjacent structures. Lipomas have high signal intensity on T1W images due to short T1 relaxation time of fat. On T2W images also fat appear bright due to its long T2 relaxation time. Signal suppression in fat suppressed images confirms the presence of fat in the lesion.

Surgical decompression and dural enlargement are considered treatments of choice for the patient with intradural lipomas. Early diagnosis and treatment gives better outcome.

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References

1. Ehne G, Love JG. Intraspinous lipomas. *Arch Neurol Psychiatry* 1945;53:1-28.
2. Giuffre R. Intradural spinal lipomas: review of the literature (99 cases) and report of an additional case. *Acta Neurochir (Wien)* 1966;14:69-95
3. Gerald TM, William S, Edward SK. Intradural lipomas. *Neurosurgery* 1987;21:343-6
4. Corr P, Beningfield SJ. Magnetic resonance imaging of an intradural spinal lipoma. *Clin Radiology* 1989;40:216-8
5. Johnson RC, Robertson GH. Subpial lipomas: a case report. *Radiology* 111,121-125,1974.
6. Fujiwara F, Tamaki N, Nagashima T, Nakamura M. Intradural Spinal Lipoma not associated with Spinal Dysraphism: A report of four cases. *Neurosurgery* 37: 1212-1215, 1995.
7. Lantos G, Epstein FE; Magnetic Resonance Imaging of Intradural Spinal Lipoma. *Neurosurgery* 20; 469-472, 1987.
8. Westbrook C, Kaut C. MRI in practice, Blackwell Science Ltd. Oxford, 1993: 17-26.
9. George CD, Hedvig H, Richard AS. Lipomatous tumors and tumors with fatty component: MR imaging potential and comparison of MR and CT results. *Radiology* 1985;157:479-83
10. Liebeskind AL, Azar-Kia B, Batnitzky S. Intraspinous lipomas. *Neuroradiology* 1974;7:197-200.
11. Randall EJ, Glenn HR. Subpial lipoma of the spinal cord. *Radiology* 1974;111:121-5
12. Lee RR. MR imaging of intradural tumours of cervical spine. *Magnetic Reson Imaging Clin N Am* 2000;8:529-40.

Author Information

Balla Suresh, MD

Assistant Professor, Department of Radiology, Santhiram Medical College & General Hospital

K Anasuyamma, MD

Assistant Professor, Department of Radiology, Santhiram Medical College & General Hospital

Mamilla Devi Uma, MD

Assistant Professor, Department of Radiology, Government General Hospital

D. Prashanth Madhu

Junior Resident, Department of Radiology, Santhiram Medical College & General Hospital

M. V. Ramanappa, MD

Professor and Head of Department, Department of Radiology, Santhiram Medical College & General Hospital