Scholars Journal of Applied Medical Sciences (SJAMS)
Abbreviated Key Title: Sch. J. App. Med. Sci.
ISSN 2320-6691 (Online)
ISSN 2347-954X (Print)

A Unit of Scholars Academic and Scientific Society, India
www.saspublishers.com

Neurosurgery

A Rare Case of Extradural Spinal Meningioma

Dr. Sreedharala Srinivasa Satyanarayana M.S, M.Ch[1], Dr. Musali Siddartha Reddy M.S[2], Dr. Srikrishnaditya Manne, M.S[3]
[1]Incharge Professor of NeuroSurgery, Gandhi Medical College, Secunderabad, India
[2]Junior Resident in NeuroSurgery, Gandhi Medical College, Secunderabad, India
[3]Junior Resident in NeuroSurgery, Gandhi Medical College, Secunderabad, India

Case Report

***Corresponding author**
Dr. Palukuri Lakshmi

Article History
Received: 01.04.2018
Accepted: 10.04.2018
Published: 15.04.2018

DOI:
10.36347/sjams.2018.v06i04.077

Abstract: Spinal meningiomas are often located intradurally although sometimes they may have extensions into the extradural compartment. Purely extradural spinal meningiomas are extremely rare. Only few (7) cases have been reported until date hence can cause a diagnostic dilemma preoperatively. In this manuscript, we report a case of extradural thoracic spinal meningioma of meningothelial variant along with review of literature.
Key words: Extradural, Meningioma, Meningothelial, thoracic, spinal.

INTRODUCTION

Though Meningiomas are quite common and account for 25 to 45 % of primary spinal neoplasms [1], Extradural Spinal Meningiomas are very rare accounting to only 2.5% to 3.5% of all spinal meningiomas. Spinal meningiomas represent approximately 7.5% to 12.5% of all meningiomas [2]. Literature identified 7 cases reports of extradural meningioma.

Extradural meningiomas are frequently found in thoracic region with a female preponderance in a ratio of 4:1 and occurring commonly in age ranging between 40 and 70 years [3].

Here we report a case of purely extradural thoracic spinal meningioma of meningothelial variant occurring in a 60-year-old woman.

CASE REPORT

A 65-year-old female has come with complaints of back pain followed by difficulty in walking for 2 months, associated with sensory changes in both lower limbs. She had no bowel or bladder disturbances.

Patient's neurological examination revealed Para paresis with motor power of grade 2/5 in both of the lower limbs and decreased sensations below T4 level bilaterally and with exaggerated knee and ankle reflexes along with extensor plantar response on both sides.

MRI revealed an extradural space occupying lesion at D2-D3 Level measuring 2.4x 0.8 x 1.4 Cms, predominantly on the left side, narrowing the canal and causing mass effect over the dorsal cord displacing it anteriorly towards the right. The lesion is hypointense to the spinal cord on T1 weighted images.

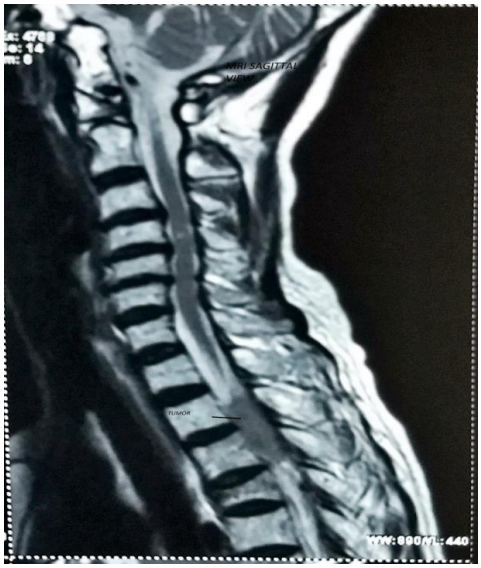

Fig-1: T2 w sagittal view of mri scan

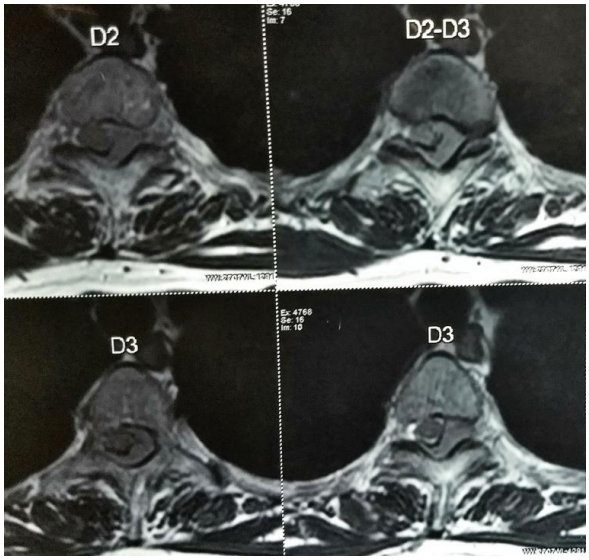

Fig-2: Axial views of mri scan

D2, D3, and D4 laminectomy and Total excision of the extradural lesion along with the dural attachment was done under the operating microscope. Tumor was found extramurally and was grey in color and firm in consistency. Tumor tissue was sent for squash, which revealed meningioma.

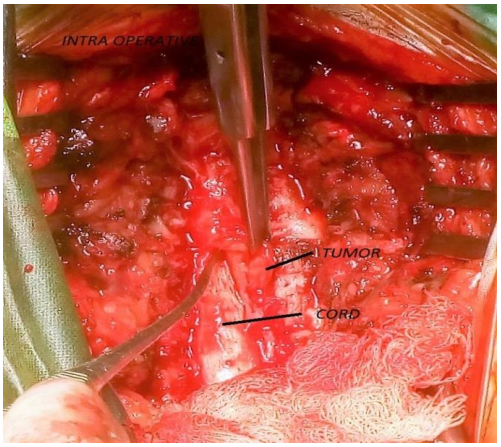

Fig-3: Intra operative picture specimen

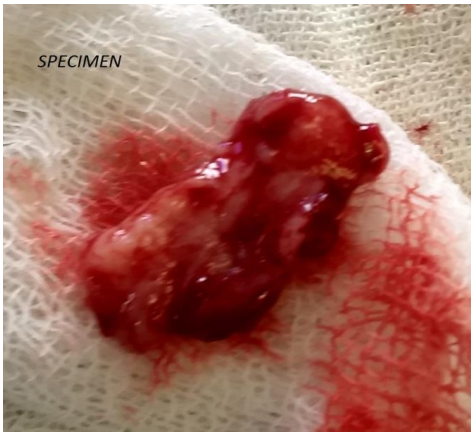

Fig-4: Picture of the excised

Histo pathological examination of the tumour tissue revealed Meningothelial variant of meningioma with characteristic features such as psammoma bodies and meningothelial whorls.

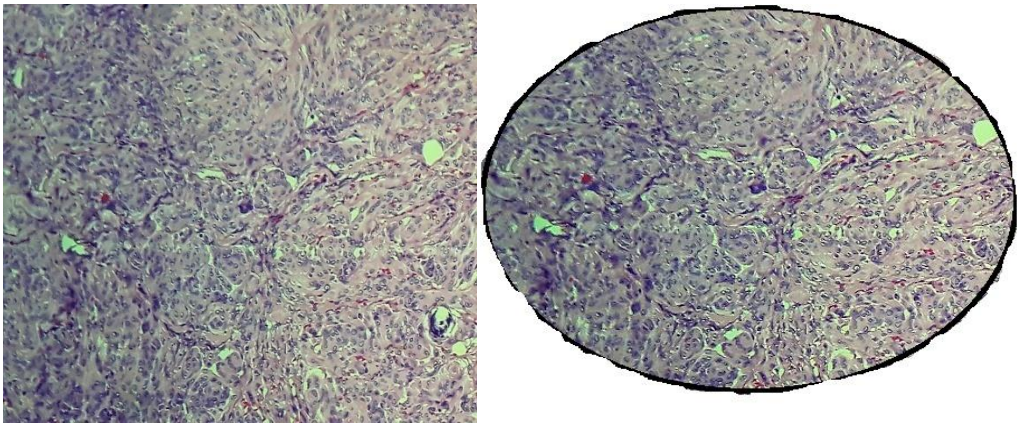

Fig-5: Histo Pathological Examination findings under microscope

Post-operative course was uneventful and there was marked improvement in the muscle strength of the lower extremities and follow up examination showed complete improvement of the weakness in both lower limbs.

DISCUSSION

Spinal tumors are classified as either extradural or intradural. Intradural tumors are further divided into intramedullary or extramedullary. The most common intramural extramedullary neoplasms are schwannomas, neurofibromas, and meningiomas. Extradural tumors are most commonly metastatic lesions [4]. Extradural meningiomas are very rare tumors accounting for 2.5-3.5% of all spinal meningioma [5-7]. On reviewing the literature, only seven case reports of extradural spinal meningioma were identified.

Patients with extradural meningioma ranged in age between 14 and 75 years, and majority of the patients were females and the lesions occurred most commonly in the thoracic spine. This gender and age preference may arise from the ongoing hormonal changes promoting the development and growth of meningioma [8].

Origin of the tumor is still unclear and it is thought that the extradural site might be due to the abnormally located meningothelial cells [7]. Few theories have been postulated regarding the possibility of origin and the pathogenesis of purely extradural meningiomas:

- They are believed to arise from ectopic arachnoid cells around the periradicular nerve root sleeve, where the spinal meninx merges directly into the duramater [9, 10].
- The periradicular duramater being less thick may contain vestigial remnants of the superficial layers of the embryonal arachnoid mater and villi explaining the extradural location and root proximity of some of the meningiomas [9, 10].
- It also has been suggested that the island of arachnoid tissue might migrate into the extradural space [9, 11].

Patients with the tumors may present with pain, sensory, motor changes and sphincter disturbances. Most often patients present with back pain followed by weakness /sensory changes. Sphincter disturbance is a late onset symptom [12].

MRI is the choice of investigation for spinal meningiomas as it clearly defines the relation of the tumor with the spinal cord [4, 7]. It appears iso or hypo intense on T1 MRI and hyperactive intense on T2 sequences with homogenous enhancement after contrast gadolinium injection [1, 7].

Treatment is usually gross total excision of the tumor however approach to the tumor depends on its location and its relation with the cord. If the tumor is located posteriorly, then posterior laminectomy is done and if the tumor is located anteriorly, then the laminectomies can be extended laterally to provide sufficient exposure and cause minimal displacement of the spinal cord or an anterior approach via posterolateral thoracotomy.

Microscopically the meningiomas are classified by WHO (2016) as

WHO GRADE 1 (BENIGN): Meningothelial, Fibrous (Fibroblastic), Psammomatous and Transitional (mixed), Angiomatous, Microcystic, Secretory and Metaplastic, Lymphoplasmacyte-rich meningiomas. WHO GRADE 2(ATYPICAL): Choroidal, Clear cell and Atypical. WHO GRADE 3(MALIGNANT): Papillary, Rhabdoid and Anaplastic. Morbidity and mortality are relatively low and complete recovery after tumor removal is common [10].

REFERENCES

1. Dagain AR. Dulou, Lahutte M. “Extra dural spinal meningioma: case report”, *Neurochirurgie*, vol 55, no 6,pp.565-568,2009.
2. Solero CL, Fornari M, Giombini S, Lasio G, Oliveri G, Cimino C, Pluchino F. Spinal meningiomas: review of 174 operated cases. Neurosurgery. 1989 Aug 1;25(2):153-60.
3. Hallpike JF, Stanley P. A case of extradural spinal meningioma. Journal of neurology, neurosurgery, and psychiatry. 1968 Apr; 31(2):195.
4. McPhee SJ, Papadakis MA, Tierney Jr LM. Gonzales R, Zeiger R, online eds. Current Medical Diagnosis and Treatment 2007.
5. Milz H, Hamer J. Extradural spinal meningiomas. Neurochirurgia. 1983 Jul;26(04):126-9.
6. Roux FX, Nataf F, Pinaudeau M, Borne G, Devaux B, Meder JF. Intraspinal meningiomas: review of 54 cases with discussion of poor prognosis factors and modern therapeutic management. Surgical neurology. 1996 Nov 1;46(5):458-64.
7. Vargas MI, Eid MA, Bogorin A, Beltechi R, Boyer P, Javier RM, Zöllner G, Dietemann JL. Les méningiomes rachidiens extraduraux: données IRM á propos de deux observations. Journal of neuroradiology. 2004 Jun 1;31(3):214-9.
8. Calogero JA, Moossy J. Extradural spinal meningiomas: report of four cases. Journal of neurosurgery. 1972 Oct;37(4):442-7.
9. Singh R, Coerkamp G, Luyendijk W. Spinal epidural meningiomas. Acta Neurochir.1968;18:237-45.
10. Zevgaridis D, Thomé C. Purely epidural spinal meningioma mimicking metastatic tumor: case report and review of the literature. Spine. 2002 Sep 15;27(18):E403-5.
11. Vakili H. The spinal Cord. New York: International Medical Book Co;1967.
12. Levy Jr WJ, Bay J, Dohn D. Spinal cord meningioma. Journal of neurosurgery. 1982 Dec;57(6):804-12.