

Intradural Extramedullary Vascular Schwannoma at Upper Dorsal Level—A Case Report

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ABSTRACT

A young male patient of 24 years was presented with the complaints of upper back pain, hyposthesia and unable to walk. MRI of upper dorsal region reveals intradural extramedullary mass lesion extending from D1 to D4 with moderate enhancement of gadolinium. Hence an extensive laminectomy and total removal of the mass. Peroperative impression and histopathological findings confirm vascular schwannoma. After operation dramatic improvement of signs and symptoms, patient can walk with minimum support during discharge from hospital.

Introduction:

Intradural extramedullary tumors constitute two thirds of all spinal neoplasms. Schwannoma and meningiomas make up approximately 90% of the total and occur in equal numbers¹. Epidemiological study suggests that spinal tumors occur with an approximate annual incidence of 2 per 100000 populations. However, with the increasing availability of new radiological tools such as MRI (Magnetic resonance imaging), spinal cord tumors are discovered more frequently². Approximately 20% of all central nervous system tumors lie within the spinal canal. Estimates of location suggests that 25% are extradural, 50% are intradural extramedullary, and 25% are intramedullary³.

Clinical presentation includes radicular pain, definite sensory level, weakness of the limbs often associated with hyperreflexia and spasticity, bowel & bladder involvement. Clinical presentation is useful in determining the exact location and level of the spinal lesion⁴.

MRI has become the primary diagnostic modality in the assessment of intradural extramedullary lesion⁵⁻⁷. Sometimes plain x-ray and CT myelogram may help.

Case history:

Zahid sikder, a 24 years male presented with upper back pain, progressive weakness of both lower limbs leading him unable to walk for 6 months. Muscle power was grade 2 in all groups of both lower limbs and grade 5 in both upper limbs, DTR of ankle and knee were exaggerated with bilateral planter extensor

Associated with ankle and patellar clonus. The sensory deficit was at D6 level bilaterally. There was no history of trauma, fever, urinary and fecal incontinence.

His x-ray chest was normal, ESR was 20 mm in first hour, Hb% was 12gm/dl. MRI of upper dorsal region shows intradural extramedullary lesion with moderate enhancement of gadolinium extending from D1 to D4 level.(Figure: 1, 2 & 3)

Wide laminectomy from C7 to D5 was done. The dura and arachnoid membrane was found normal. The lesion caused compression of the cord from right posterolateral to the left. The lesion was attached with D5 root and was separated cautiously with sacrificing few rootlets. It was reddish and vascular in appearance. The whole mass was removed. Watertight closer of dura was done and the wound was closed in layers remaining a drain in situ. Histopathological examination reveals a vascular schwannoma. After operation signs and symptoms were gradually improved, physiotherapy was started and the patient was discharged on ninth post operative day. During discharge the patient could walk with minimum support. He was advised to take physiotherapy and light exercise regularly and in follow up visit he could walk without support after one month.

Discussion:

Intradural extramedullary schwannomas are common spinal tumor in dorsal region, particularly in mid and lower dorsal level. It constitutes two thirds of all spinal tumors. Schwannoma and meningiomas constitute 90% and occur in

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equal numbers. 30-60 years of age groups are more prone to develop. Our patient was 24 years old. Pain and weakness are most readily identified objective symptoms and signs. Radicular pain is often worse at night and may completely disappear at daytime. Weakness is always associated with hyperreflexia and spasticity of the affected limbs.

MRI has become the primary diagnostic modality in the assessment of intradural extramedullary lesions. Schwannomas are iso to hypointense spinal cord on T1 weighted images but hyperintense on T2 weighted images. These lesions usually enhance intensely and fairly homogenous with gadolinium, but also enhance heterogeneously⁸. On Histopathological examination the tumor was diagnosed as a vascular schwannomas which is not very common. (Figure-1)

Fig - 1 MRI T1 image shows hyperintense lesion (D1-D4)



Surgery is the treatment of choice. Short term outcome in the surgical treatment of intradural extramedullary neoplasm is generally excellent with very gratifying improvement of neurologic function⁹. Most patient will return to normal or near normal status. Physical therapy and occupational therapy are considered to be standard post operative treatment to optimize the neurologic recovery period (Figure-2).

The risk of recurrence is estimated to be less than 10% in gross total resection of schwannomas¹⁰.

A follow up MRI study is recommended at 6 months then 1 year after surgery. If there is no obvious recurrence a follow up study is scheduled after 2 years. If the subsequent study does not demonstrate tumor recurrence a follow up study at 5 years is recommended.

Fig - 2 MRI T2 image shows hyperintense lesion (D1-D4)



Complications related to surgical intervention for intradural extramedullary tumors include hemorrhage, infection, CSF leaks and new significant neurodeficits. The postoperative sequelae was uneventful in our case (Figure-3).

Fig - 3 MRI T1 with contrast lesion enhanced with contrast



The surgical management of spinal intradural extramedullary schwannoma has become simplified in the past 12 years. The excellent surgical outcome obtained today are primarily related to the early diagnosis achieved with new neuroradiological diagnostic studies (MRI) and improved surgical techniques. In addition, intraoperative electrophysiologic monitoring has been exceedingly valuable in predicting detecting and preventing neurologic injury. In summary neurosurgeons today can anticipate a very satisfying surgical result in the treatment of intradural extramedullary neoplasm.

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