



Extradural spinal schwannoma at cervical spine in 12 year old child

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ABSTRACT

Spinal schwannomas are benign tumors arising from spinal nerve root sheaths. It is a primary spinal tumor which are rare in children. We report a case of a 12 year old girl who presented with weakness of all limbs and unable to walk. Imaging studies demonstrated an extradural spinal tumor at cervical spine. The patient was operated and tumor was totally removed. The postoperative course was uneventful. Histology confirmed the diagnosis of schwannoma. After surgery there was improvement in signs and symptoms. After two months of operation, child could able to walk normally.

Key words: Schwannoma, Benign tumor, Extradural spinal tumor

INTRODUCTION

Tumors of spinal canal and its elements comprise of 5 -10% of central nervous tumors in pediatric age group[1]. Schwannomas are benign tumors originating from Schwann cells primarily in the dorsal nerve root, comprising of about 30% of primary intra spinal tumors. These are typically seen in the age group of 40-60 years and are rare in children[2]. Their most common site is intradural extramedullary compartment and are rarely confined to extradural space alone[3].

Clinical presentation includes pain at the site of lesion, loss of pain and temperature sensations, radicular pain and neurological dysfunction. These are the presenting symptoms at the time of diagnosis.

Case report:

A 12 year old girl was admitted in pediatric department of Chalmeda Anand Rao Institute of Medical Sciences, Karimnagar, which is a tertiary care hospital with weakness of all limbs and difficulty in walking for one month. The weakness of gradual in onset which first appeared in right upper limb in distal group of muscles followed by involvement of proximal muscles. Weakness was progressive and extended to left lower limb, right lower limb and right upper limb over a period of one month. She had no sensory symptoms and her bladder and bowel movements were regular. Her past medical history and family history were insignificant. Her physical examination was normal with no signs of neurofibromatosis. Neurological examination revealed quadriparesis with power of 2/5 in left lower limb and 4/5 in remaining limbs, hypertonia in all limbs, all deep tendon reflexes were exaggerated with bilateral extensor responses. No sensory level defect was detected. There was no spinal deformity.

Her hematological and biochemical investigations were normal. MRI of spine showed lobular extradural mass lesion of 2.5 x 1.3 cm size, which is Iso intense on T1 image and hyper intense on T2 image noted at C3, C4 and C5 vertebral level on left side causing compression and displacing spinal cord to right side. MRI of brain was normal [Fig.1].



Fig:1 Child underwent surgical excision of tumor via laminectomy

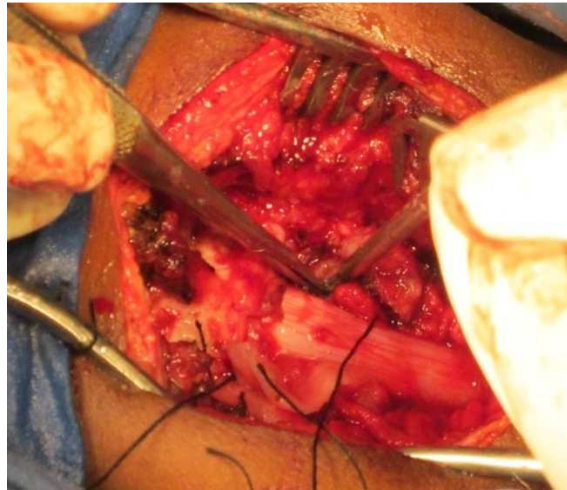


Fig 2

Tumor sent for histopathological examination. The tumor was composed of compactly arranged spindle cells with elongated nucleus with tapering end, focally wavy with Verocay bodies in a few areas [Fig.3].

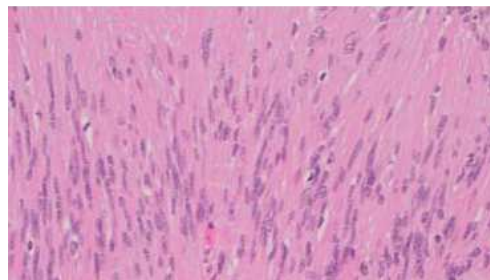


Fig 3: showing verocay bodies

After surgical excision signs and symptoms were gradually improved, physiotherapy was started and child was discharged on tenth postoperative day. After two months of follow-up, child could able to walk without support and do all her daily activities.

DISCUSSION

Schwannoma presenting in pediatric age group is rather rare and it is especially associated with neurofibromatosis. Symptomatic intraspinal schwannoma is rarely seen in pediatric age group[4]. These are most commonly found in the intradural, extramedullary space[5]. In our case it is located in extradural space.

The signs and symptoms are not specific to tumors and these are due to compression of spinal cord by any mass lesion. MRI has become the primary diagnostic modality in the assessment of spinal tumors. Schwannomas are Iso or Hypo intense on T1 weighted images and hyper intense on T2 weighted images[6].

Surgery is the treatment of choice. Main objective of surgery is to perform surgical decompression without instability and remove the tumor by not damaging the neural tissue[7]. Intra-operative electrophysiological assessment can be useful in deciding on the surgical procedures, when it is demonstrated that motor and sensory nerve roots involved in the schwannoma are already less or not functional, total resection can be done without consequent neurological deterioration[8].

Prognosis is generally excellent with good improvement in neurological function[9]. The risk of recurrence is estimated to be less than 10% in gross total resection of schwannoma[10]. These tumors carry excellent prognosis in neurofibromatosis patients and recurrence risk is also very low[11].

A follow up of MRI study is recommended at 6 months then 1 year after surgery. If there is no recurrence, follow up should be done after 2 years. If it is also normal, next follow up study should be done after 5 years.

CONCLUSION

Spinal schwannomas are rare in pediatric age group. They are most commonly located as intradural, extramedullary tumor. In our case it is located as extradural tumor. Surgical excision is the treatment of choice for schwannomas. Prognosis is excellent in completely resected cases.

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