A RARE CASE OF CYSTIC SCHWANNOMA

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CASE PRESENTATION

A 40 years old male patient, reported in Neurosurgery OPD of Mahatma Gandhi National Institute of Medical Sciences (MGM Hospital), Jaipur, Rajasthan. His chief complaint was lower back ache on and off, and also reported pain radiating to lower limbs bilaterally. The clinical diagnosis did not reveal much but the diagnostic evaluation demonstrated a well-delineated, intradural extramedullary cystic mass on MRI at the level of L4 to L5, which was hypointense on T1W1 and hyperintense on T2W1, depicting of Cystic Schwannoma. The contrast enhanced MRI could not be performed due to the financial issue. As it was important to differentiate it from other cystic lesions, a definitive diagnosis of cystic schwannoma was made by Histopathological examination. Treatment involved excision of space occupying lesion completely to prevent its recurrence.[1]

CLINICAL DIAGNOSIS

Intradural Extramedullary Cyst

Clinical symptoms are usually seen as a result of spinal cord or root compression and few are seen until the tumour turn into a large mass. Commonly seen symptoms are local pain, numbness, paraesthesia, numbness and motor weakness while patients with lumbar lesions show back pain associated with radiculopathy like symptoms. A cystic type of tumour is associated with worsening of symptoms as a result of cyst expansion.[2]

In our case the physical and neurological examination revealed local tenderness, presence of reflexes with no sensory deficit and no involvement of bladder and bowel. Straight leg raising test showed straight leg at an angle of 60 degrees bilaterally, Extensor Hallucis Longus (EHL) in both lower limb scored 3/5.

Diagnostic Evaluation

MRI Lumbo-Sacral spine was done for the diagnostic evaluation. MRI findings included well defined intradural heterogeneous signal intensity mass in lumbar canal opposite L4-5 displacing filum terminale to right and no extension seen into the neural foramina.

Figure 1. Sagittal MRI Images of Spine Showing Intradural Extramedullary Lesion at L4 to L5 with Listhesis of L5 Over S1; Also Showing Hypointense T1W1 and Hyperintense T2W1

MRI imaging of schwannomas generally show low to intermediate signal intensity on T1W1 while on T2W1 it may be heterogenous with focal areas of hypointensity or hyperintensity. Collagen deposition, or haemorrhage may be seen as hypointense area on T1W1 whereas hyperintensity on T2W1 may represent cystic part.[3, 4]

In our case the lesion is hyperintense on T2 and hypointense on T1 suggestive of cystic mass lesion- GRADE – I with anterior listhesis L5 over S1.

DIFFERENTIAL DIAGNOSIS

- Cystic Schwannoma
- Intradural Spinal Abscess
- Arachnoid Cyst
- Epidermoid Cyst
- Dermoid Cyst
- Neurenteric Cyst
- Hydatid Cyst
- Tarlov Cyst
- Cystic Teratoma

All cystic schwannomas show a well enhanced wall compared to other cystic lesions.[5, 6]

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PATHOLOGICAL DISCUSSION

To obtain a biopsy sample for pathological findings and to relieve the symptoms, complete excision of intradural extramedullary space occupying lesion was done and was sent for the histopathology examination.

Gross examination of the tumour revealed a single grey white to grey brown cystic soft tissue mass measuring 2.5 x 1.5 x 1 cm, with external surface in a grey black and brownish colour, and a uniloculated cyst present with a cyst wall of diameter of 0.2 cm and also seen some haemorrhagic material.

Histopathological features are suggestive of cystic Schwannoma (WHO GRADE I).

The cystic change is attributed to one of the following proposed theories. In Schwannoma it can be either due to degeneration of Antoni B portion or due to Central ischemic necrosis/haemorrhage or may be due to mucinous degeneration. The theory of degeneration of Antoni B portion likely explains the formation of uniloculated cyst in schwannoma which progress to form a larger cyst.[4]

DISCUSSION OF MANAGEMENT

Spinal Schwannomas are the slow growing benign tumours, well circumscribed and encapsulated arising from the embryonic neural crest cells of spinal nerve root sheaths. It is most commonly seen as intradural extramedullary lesion in cervical and lumbar region.[7]

Though tumours in the lumbar region are common and are generally solid or heterogeneously solid [1] but predominantly cystic schwannomas are uncommon.[8]

The surgical intervention was planned with complete excision of space occupying lesion. The patient underwent Laminectomy at L4 to L5 level with partial at S1 level. The lesion found was Intradural Extramedullary. Then durotomy was performed, disclosing a single grey white to grey brown cystic soft tissue mass which displaced the cord to the right side. The wall of the tumour was then totally removed after separating it from the nerve root.

To maintain the stability of the lumbar spine the spinal fixation for listhesis of L5 over S1 was done with six pedicle screw, each pair placed at L4, L5 and S1 level. And was confirmed by C- arm.

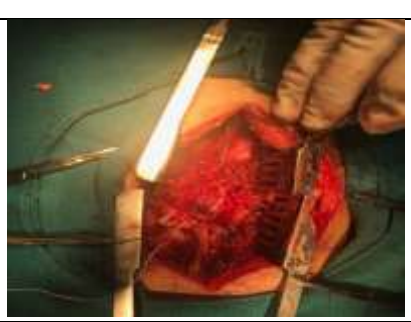

Figure 2. Intraoperative Photograph Showing a Cystic Lesion

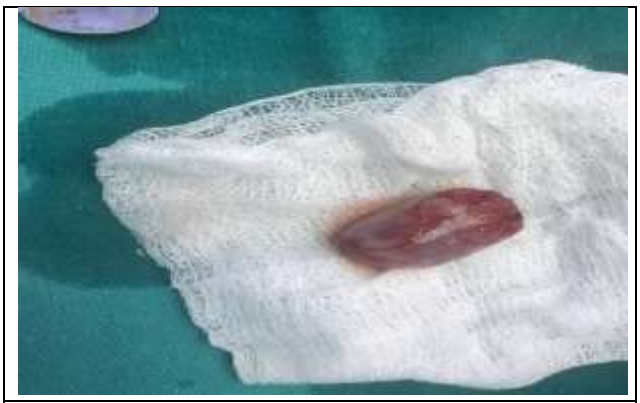

Figure 3. Complete Excision of the Cystic Schwannoma; Excised Tumour was Sent for Histopathology Examination

Figure 4a. Spinal Fixation with Six Pedicle Screws from L4 To S1

Figure 4b. Confirmed by C Arm

The patient was recalled after 15 days or as per needed. On examining the operation site, the suture line found to be healthy. There was presence of reflexes and a mild local

tenderness. Straight leg raising test showed the straight leg at an angle of 90 degrees bilaterally and Extensor Hallucis Longus (EHL) scored 5/5 bilaterally. Patient showed good operative outcome.

Figure 5a) Healthy Suture Line; B), C), D) After 15 Days Patient Recalled and On Physical Examination Patient Was Able to Balance on Both Its Lower Limb Hence Showing Good Postoperative Outcome

CONCLUSION

Intradural extramedullary cystic spinal schwannoma are not so common lesions. It should be differentiated from other cystic mass. Though contrast MRI is a key to evaluation however all the cases cannot be predicted preoperatively hence histopathology should be used to make a definitive diagnosis. Total excision of the lesion is important so as to prevent its recurrence and to obtain good neurological outcome.

FINAL DIAGNOSIS

Cystic Schwannoma WHO Grade I

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