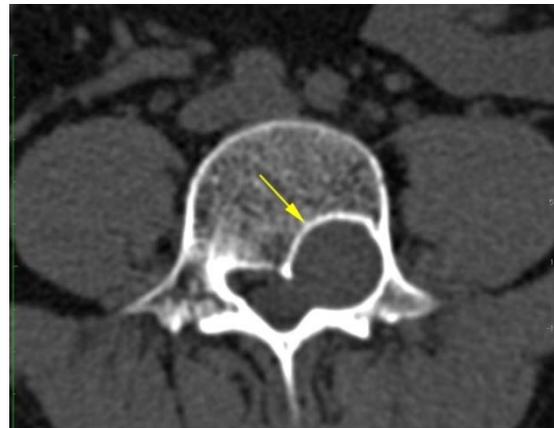


Clinical History:

A 59 year old male patient presented with back pain radiating to left lower limb since few years. Prior X rays did not reveal any abnormality. Patient referred for imaging of L-S Spine.



Sagittal MPR CT: Widening of the intervertebral foramen L4/L5 and marked scalloping of the posterior vertebral body L4.



Transverse section through L4, showing scalloping with rim sclerosis.

Imaging Findings:

On CT scan, there was a lesion eroding the borders of the left neuroforamen and especially the posterior contour of the L4 vertebral body. There was marked rim sclerosis around the lesion indicating a non-aggressive lesion. MRI performed subsequently showed a T2-hyperintense, somewhat heterogeneous lesion along the left L4 traversing nerve root, protruding in to the superior part of the L4-L5 neural foramen on the left side. On T1WI images, the lesion was completely isointense to muscle. On post contrast the lesion enhanced avidly. Retrospectively, X ray L-S spine revealed defect in the L4 vertebral body on the left side with non visualisation of the left pedicle.

Final Diagnosis: Schwannoma (Neurilemmoma)

Discussion:

Schwannomas or neurilemmomas are typically benign neoplasms arising from the myelin sheath of spinal nerve roots, cranial or peripheral nerves. In the spine, they may be located intradurally, extradurally or both (dumb-bell type). Most lumbar intradural extramedullary tumours are Schwannomas. Intramedullary location is exceptional. Purely intraosseous Schwannomas of the spine



Sag T1 FSE : The lesion is isointense to muscle tissue.



Sag. T1 FSE, fat sat +Gd: The lesion enhanced avidly with contrast.

have also been reported, but they represent only less than 0.2% of all primary bone tumours. Due to their slow growth, benign spinal Schwannomas cause little symptoms and may become quite large before they are detected. The most typical radiographic sign is widening of the interpedicular distance, that usually precedes the development of posterior vertebral scalloping in intra-extradural tumours. However, the diagnosis can usually be secured by MRI before bony changes have developed. Characteristic MRI features of Schwannomas besides their anatomic location are hyperintense and heterogeneous signals on T2-weighted as well as contrast-enhanced T1-weighted images. Uncommon presentations may be caused by infarction, cystic degeneration, haemorrhage or melanin content of these neoplasms.

Posterior vertebral scalloping is an exaggeration of the normal concavity of the posterior contour of one or more vertebral bodies. It can be seen on conventional lateral radiographs of the spine and on sagittal and transverse CT or MR images. Scalloping in contrast with osteolysis is characterised by a smooth margin with rim sclerosis towards the spinal canal. It is caused by a mismatch between intraspinal pressure and bone stability. Systemic disorders, that may lead to vertebral scalloping are connective-tissue diseases, mucopolysaccharidoses, neurofibromatosis type I or ankylosing spondylitis. Occasionally, scalloping may also be caused by local slowly-growing intraspinal masses,



such as ependymoma, intra- and extradural spinal cysts, lipoma or schwannoma (as presented in this case)

D/D:

- Other slowly-growing spinal neoplasms.
- Intradural and extradural spinal cysts.
- Neurofibromatosis.

Message:

- **Schwannomas /Nerve sheath tumours are the commonest of the intradural spinal tumours. Occasionally they may cause scalloping of the vertebra, as in the case presented.**
- **MRI is the imaging modality of choice for case of low back pain / posterior vertebral scalloping/ spinal tumours; because of better tissue differentiation and multiplanar imaging.**
- **Besides diagnosing extent of degenerative disc disease , MRI also rules out other causes of nerve compression.**
- **X ray spine, though a first line of investigation in low back pain is not sensitive enough to detect spinal problems. Hence MRI may be necessary in complicated / unexplained acute/chronic back pain.**

Regards,

Dr.Deepa S.Nadkarni / Dr.Shaikh M.Mazhar

N.B: This case is authentic and from the archives of Radiance Diagnostics. For any queries / suggestions/feedback write to us at radiance@radiancediagnostics.in