Radiology Case Reports

Volume 9, Issue 3, 2014

Lumbar spine chordoma

M. A. Hatem, M.B.Ch.B, MRes, LMCC

Chordoma is a rare tumor arising from notochord remnants in the spine. It is slow-growing, which makes it difficult to diagnose and difficult to follow up after treatment. Typically, it occurs in the base of the skull and sacrococcygeal spine; it rarely occurs in other parts of the spine. CT-guided biopsy of a suspicious mass enabled diagnosis of lumbar spine chordoma.

Case report

A 56-year-old man presented with low back and hip pain radiating to the groin. Imaging revealed a destructive mass in the L3 body. CT-guided biopsy of the mass was performed (Figs. 1-6), and pathology confirmed the lesion as chordoma.

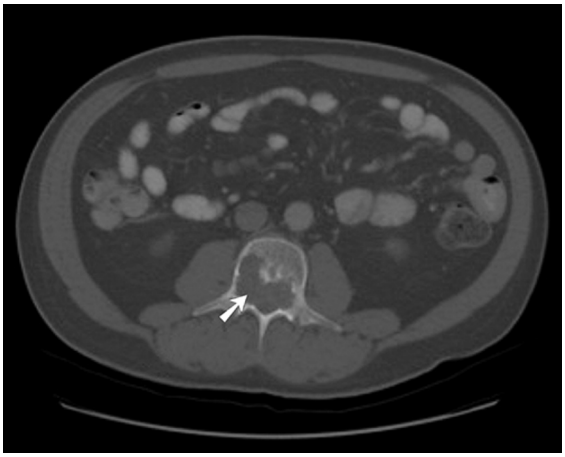

Figure 1. Axial CT image in bone window shows a central destructive lesion in the body of the L3 vertebra (arrow).

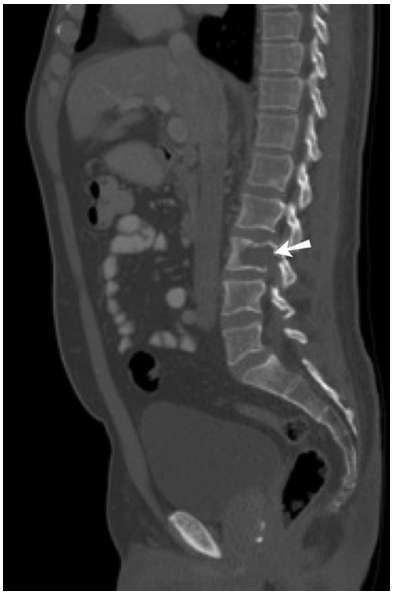

Figure 2. Sagittally reformatted CT image in a bone window shows a central lytic lesion in L3 vertebra (arrow).

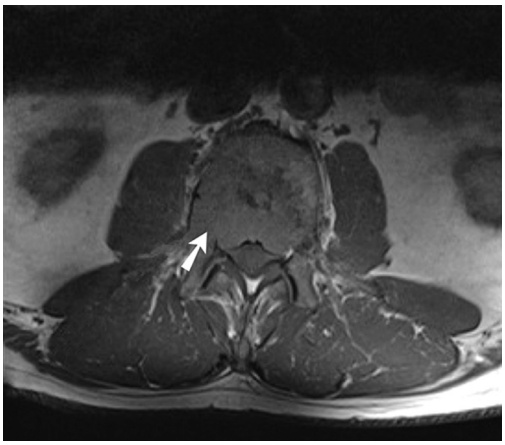

Figure 3. Axial T1W MR image shows a low-intensity lesion in the L3 body (arrow).

Citation: Hatem MA. Lumbar spine chordoma. *Radiology Case Reports*. (Online) 2014;9(3);940.

Dr. Hatem is at the Foothills Medical Center, Calgary AB Canada. Contact him at asl7mak@gmail.com.

Competing Interests: The author has declared that no competing interests exist.

DOI: 10.2484/rcr.v9i3.940

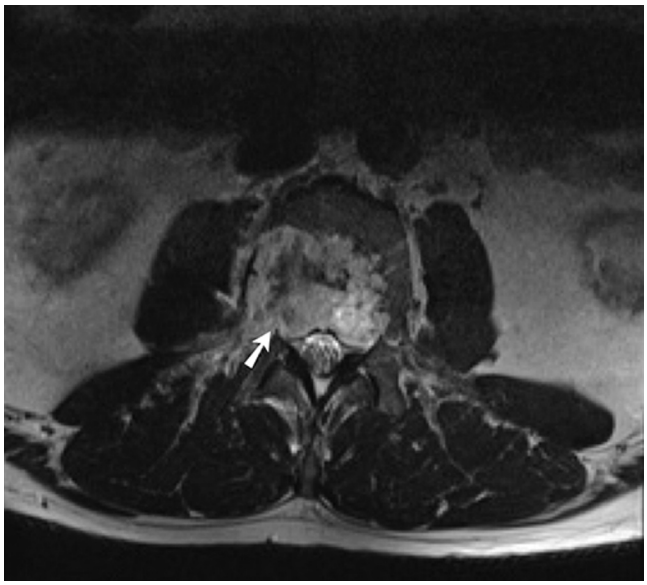

Figure 4. Axial T2W MR image shows increased signal within the L3 body lesion (arrow).

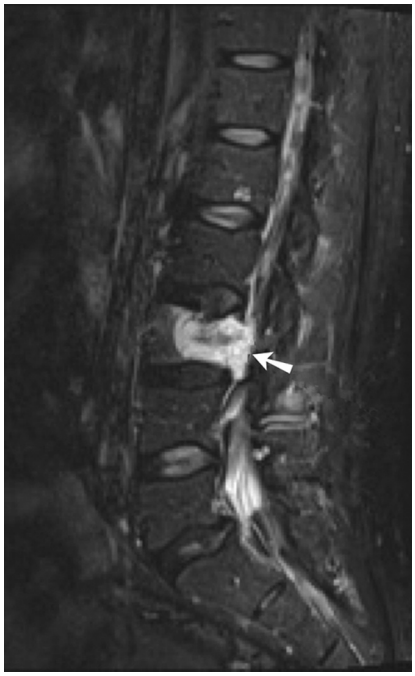

Figure 5. Sagittal STIR MR image shows a high-intensity lesion in the L3 vertebral body (arrow).

Discussion

Chordoma is a rare tumor that arises from notochord remnants in the vertebral column and base of the skull. It typically affects people in their 5th and 6th decades, and the majority of the tumors arise in the sacrococcygeal spine and in the base of the skull (1). Chordoma rarely occurs in other spinal locations. Chordoma occurs in the sacrococcygeal spine in about 50-60% of cases. and in the base of the skull in about 15-40% of cases (2, 3). It is a slow-growing tumor, which makes it difficult to diagnose and follow up after treatment (4).

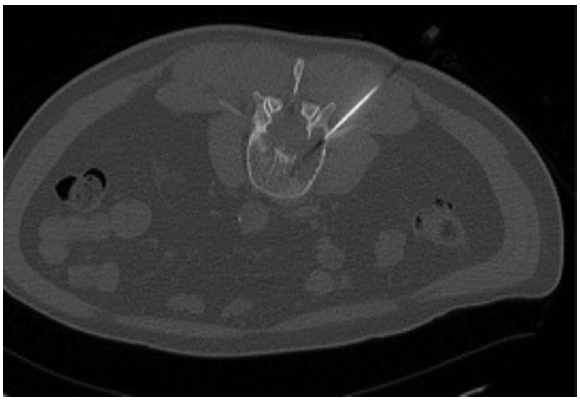

Figure 6. Axial CT image during a transpedicle, CT-guided biopsy of the L3 vertebral body.

Chordoma represents 1-4% of primary bone tumors. Affected patients usually have a poor prognosis because of the extensive nature of the disease at the time of diagnosis, which may make it difficult to perform a radical resection (5). Because the condition is rare (0.0005% yearly incidence), only few centers around the world have developed comprehensive treatment protocols (6).

On CT, chordoma appears as a central, well-circumscribed lytic lesion with occasional marginal sclerosis and central calcifications. It may exhibit moderate to marked enhancement following contrast administration. On MRI, chordoma exhibits intermediate to low intensity on T1W images and high signal on T2W images. It has normal or decreased uptake on radionuclide bone scans.

Chordoma is a rare condition that should be considered in the differential diagnosis of central destructive lesions in the spine and base of skull. The differential diagnosis of a lucent lesion in the spine should also include chondrosarcoma, giant-cell tumor, spinal metastasis, plasmacytoma, and spinal lymphoma (7).

References

1. Aydin AL, Sasani M, Oktenoglu T, Solaroglu I, Ozer AF. A case of chordoma invading multiple neuroaxial bones: report of ten years follow up. *Turk Neurosurg.* 2013;23(4):551–6. [PubMed]
2. Fontes R, O'Toole JE. Chordoma of the thoracic spine in an 89-year-old. *Eur Spine J.* 2012 Jun;21 Suppl 4:S428–32. [PubMed]
3. Wang T-J, Shu S-H, Lin C-W, Chen L-F, Lin T-C, Chang Chien H-S, et al. Thoracic chordoma: an unusual presentation of the spinal tumor. *Am J Med Sci.* 2008 Mar;335(3):239–41. [PubMed]
4. Boriani S, Bandiera S, Biagini R, Bacchini P, Boriani L, Cappuccio M, et al. Chordoma of the mobile spine: fifty years of experience. *Spine.* 2006 Feb 15;31(4):493–503. [PubMed]

5. Jallo J, Nathan D, Bierbrauer K, Farber E. Chordoma: a case report. *Surg Neurol.* 1997 Jul;48(1):46–8. [PubMed]
6. Baratti D, Gronchi A, Pennacchioli E, Lozza L, Colecchia M, Fiore M, et al. Chordoma: natural history and results in 28 patients treated at a single institution. *Ann Surg Oncol.* 2003 Apr;10(3):291–6. [PubMed]
7. Jones J, Gaillard F. Chordoma. Available online at: http://radiopaedia.org/articles/chordoma. Accessed on November 18, 2013.