



Case Report

A lumbar chondroma originating from the intervertebral disc

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ABSTRACT

Background: Chondromas, benign cartilaginous primary bone tumors, seldom occur in the spine. Most spinal chondromas arise from the cartilaginous parts of the vertebra. Chondromas originating from the intervertebral disc are extraordinarily rare.

Case Description: A 65-year-old female experienced recurrence of low back pain and left-sided lumbar radiculopathy after microdiscectomy and microdecompression. A mass continuous with the intervertebral disc was found to be compressing the left L3 nerve root and was resected. Histologic examination revealed a benign chondroma.

Conclusion: Chondromas developing from the intervertebral disc are extremely rare; we could find only 37 reported cases. Identification of these chondromas is difficult because until surgical resection they are almost indistinguishable from herniated intervertebral discs. Here, we describe a patient with residual/recurrent lumbar radiculopathy caused by a chondroma originating from the L3–4 intervertebral disc. When a patient has recurrence of spinal nerve root compression after discectomy, a chondroma arising from the intervertebral disc is an uncommon but possible etiology.

Keywords: Chondroma, Extraforaminal disc herniation, Nerve sheath tumor, Spinal tumor

INTRODUCTION

Chondromas are benign tumors composed of cartilage. Chondromas of the spine are uncommon, comprising 2% of spinal tumors, and most reported cases are in the cervical spine.^[5,9] In addition, most spinal chondromas originate from the vertebra.^[10] This article describes a rare case of a lumbar chondroma arising from the intervertebral disc. The tumor was mistakenly diagnosed as an extraforaminal disc herniation during an initial surgery. After its recurrence, it was presumed to be a nerve sheath tumor based on its radiologic appearance. Following lesion excision, the correct diagnosis of a chondroma was confirmed.

CASE PRESENTATION

A 65-year-old female presented with 3 months of low back pain and left hip pain. Magnetic resonance imaging (MRI) revealed a cystic-appearing lesion in the left L3–4 neural foramen, thought to be a left-sided extraforaminal disc herniation [Figure 1]. Following an initial left-sided L3–4 extraforaminal discectomy, her pain improved at first but recurred 3 months later. A second MRI

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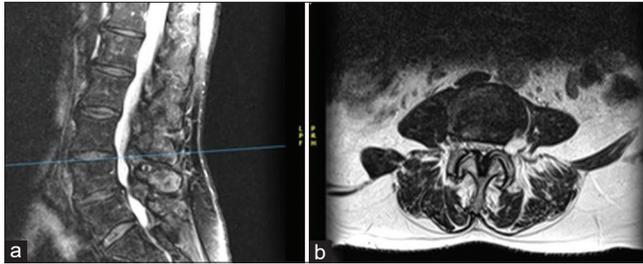


Figure 1: Preoperative magnetic resonance imaging without contrast before first surgery. (a) T2 parasagittal fat suppression. Cystic-appearing lesion in the left L3–4 neural foramen visible on (b) T2 axial at L3–4.

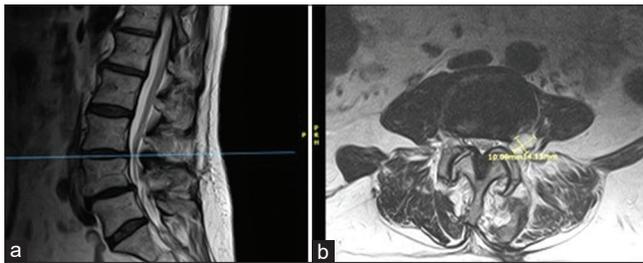


Figure 2: Postoperative magnetic resonance imaging without contrast after first surgery. (a) T2 parasagittal. Cystic-appearing lesion approximately 1.4 × 1.0 cm in the left L3–4 neural foramen visible on (b) T2 axial at L3–4.

revealed a cystic mass approximately 1.4 × 1.0 cm on the left at L3–L4 extraforaminally; it was diagnosed as a postoperative seroma [Figure 2]. Two years later, she again presented with recurrent low back pain, worsening left leg weakness, and left L3 radiculopathy. A follow-up MRI demonstrated a lobulated cystic mass approximately 2.5 × 2.4 × 2 cm within the left L3–4 neural foramen compressing the L3 nerve root. The mass was continuous with the annulus fibrosus [Figure 3]. With the main preoperative diagnosis of a L3–4 cystic nerve sheath tumor, she underwent repeated excision of the left-sided lesion.

Pathology

Grossly, the tumor was lobulated and contained well-formed hyaline cartilage. Microscopically, it was a cartilaginous neoplasm with mild atypia but without mitoses or any myxoid areas. These findings were consistent with a benign extraosseous chondroid lesion, most likely chondroma versus chondromatosis [Figure 4].

One-year follow-up

Within the next year, despite four postoperative MRI scans showing no new mass, no abnormal enhancement, and no significant change in the resection cavity, the patient still experienced residual weakness but had improved left leg pain.

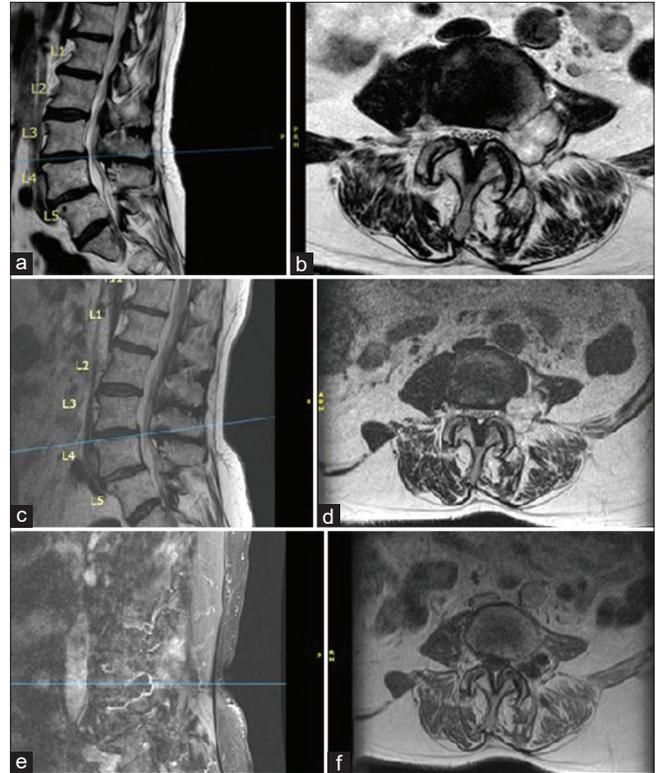


Figure 3: Preoperative magnetic resonance imaging before second surgery. (a) T2 parasagittal without contrast. Progressive enlargement of lesion in the left L3–4 neural foramen with marked mass effect on the exiting L3 nerve visible on (b) T2 axial without contrast at L3–4. (c) T2 parasagittal without contrast. Redemonstration of lobulated T2-hyperintense mass measuring 2.5 × 2.4 × 2 cm centered in the left neural foramen visible on (d) T2 axial without contrast at L3–4. Peripherally enhancing cystic mass visible on (e) T1 parasagittal with contrast and (f) T1 axial with contrast at L3–4.

Table 1: Reported cases of chondromas originating from the intervertebral disc.

Author	Cervical	Thoracic	Lumbar
Schmorl, 1926 ^[1]		3	
Stookey, 1928 ^[1]	7		
Alajouanine and Petit-Dutaillis, 1928 ^[1]			2
Dandy, 1929 ^[4]			2
Von Pechy, 1929 ^[1]		1	
Robineau, 1929 ^[1]			2
Bucy, 1930 ^[1]			1
Elsberg, 1931 ^[1]	9	2	4
Crouzon et al., 1931 ^[1]			1
Alpers et al., 1933 ^[1]			1
Loscertales, 1952 ^[7]	1		
Current study			1
Total	17 (46%)	6 (16%)	14 (38%)

Table 2: Symptoms and physical examination findings in patients with chondromas originating from the intervertebral disc.

Author	Tumor location	Symptoms	Physical exam findings
Dandy, 1929 ^[4]	L3–4 L4–5 (corresponding to normal L3–4)*	Low back pain Leg pain Leg weakness Urinary and stool retention Low back pain Leg pain Paraplegia Stool retention	Flaccid paralysis below knees Loss of urinary and anal sphincter tone Lower extremity hypoesthesia Tenderness over lumbar spine Continuous spasm of lumbar muscles Deep tendon hyporeflexia of knees Tenderness over lumbar spine
Alpers et al. 1933 ^[1]	L3–4	Low back pain Leg pain Leg weakness Leg numbness	Lower extremity weakness Lower extremity hypoesthesia Absent Achilles reflex Positive straight leg raise test
Loscertales, 1952 ^[7]	C4–5	Tetraplegia Pain and paresthesias of all four extremities Urinary retention Seizures	Deep tendon hyperreflexia in upper and lower extremities Positive Hoffman and Tromner signs Positive Babinski sign Clonus
Current study	L3–4	Low back pain Leg pain Leg weakness	Lower extremity weakness Lower extremity hypoesthesia

*Patient had a supernumerary lumbar vertebra.

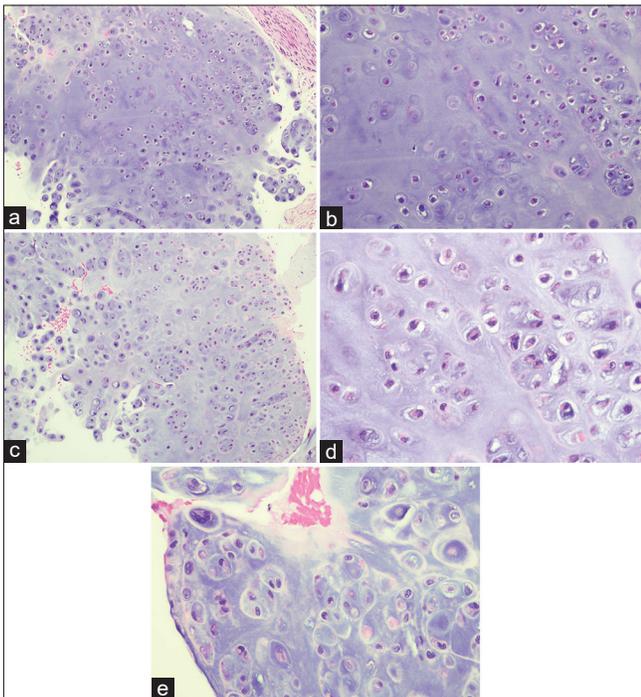


Figure 4: Hematoxylin and eosin staining of the specimen. (a and b) Cellularity is somewhat increased compared to normal cartilage, but there is only mild atypia, no mitoses, and no myxoid areas. (c) Lobulated architecture of the cartilaginous neoplasm. (d) Bland histologic features, no atypia, no mitoses, favoring a benign extraosseous chondroid lesion. (e) A rare focus of mild atypia in the otherwise histologically bland neoplasm.

DISCUSSION

Chondromas are benign, cartilaginous primary bone tumors, most commonly found in the small bones of the hands and feet. Only 2% occur in the spine.^[3] Most spinal chondromas develop from cartilaginous parts of the vertebra. We could find only 37 cases in the literature of chondromas arising from the intervertebral disc [Table 1].^[1,4,7] Until intraoperative or histologic examination, such chondromas are nearly indistinguishable from herniated discs, with similar signs and symptoms [Table 2]. On MRI, however, chondromas tend to be lobulated and peripherally enhancing with gadolinium.^[6,9] Over 90% of lumbar chondromas are unilateral and can therefore be treated with hemilaminectomy followed by tumor resection.^[9] The postoperative recurrence rate is <10%, and recurrence is usually due to incomplete tumor removal.^[2,8] Isolated chondromas have a 10% rate of malignant transformation.^[6] Notably, chondrosarcomas are generally resistant to chemotherapy and radiation, so, repeated surgical gross total removal remains the treatment of choice.^[8]

CONCLUSION

This case illustrates that when a patient experiences recurrent pain, weakness, and a MRI-documented recurrent mass following a prior discectomy, one should consider a possible underlying chondroma.

Declaration of patient consent

Patient's consent not required as patient's identity is not disclosed or compromised.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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