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Editor: Nancy E. Epstein, MD Winthrop Hospital, Mineola, NY, USA

Case Report

Spinal angiolipoma mimicking a schwannoma: A case report

Abrar A. Wani, Arif H. Sarmast[1], Altaf U. Ramzan, Abdul Q. Khan, Sarabjit S. Chhibber, Nayil K. Malik, Feroz Shaheen[2]

Departments of Neurosurgery and [2]Neuroradiology, Sher I Kashmir Institute of Medical Sciences, Srinagar, Jammu and Kashmir, [1]Department of Neurosurgery, Jawaharlal Nehru Medical College, Aligarh, Uttar Pradesh, India

E-mail: Abrar A. Wani - abrarawani@rediffmail.com; *Arif H. Sarmast - arifhsarmast@gmail.com; Altaf U. Ramzan - altafuramzan@yahoo.com; Abdul Q. Khan - aqayumkhan@gmail.com; Sarabjit S. Chhibber - sarabjitsingh@gmail.com; Nayil K. Malik - nayilkhursh@gmail.com; Feroz Shaheen - ferozshaheen@gmail.com
*Corresponding author

Received: 30 January 18 Accepted: 12 March 18 Published: 10 April 18

Abstract

Background: Angiolipomas rarely involve the spinal canal/foramina, and may prove difficult to differentiate from schwannomas.

Case Description: Here we report a patient who presented with a spinal angiolipoma contributing to spinal cord and neural foraminal compression that was difficult to differentiate from a schwannoma.

Conclusion: Spinal angiolipomas rarely involve the spinal canal/foramina. Utilizing neurodiagnostic studies with pathological confirmation, these lesions may be differentiated from schwannomas.

Key Words: Angiolipoma, spine, tumor

Access this article online
Website: www.surgicalneurologyint.com
DOI: 10.4103/sni.sni_38_18
Quick Response Code:

INTRODUCTION

Spinal angiolipomas are benign tumors of adipose tissue that rarely involve the spinal neuraxis.[3,14] They are composed of mature lipocytes admixed with abnormal blood vessels. Because of their typical mid-thoracic epidural location, spinal cord and nerve root compression typically contribute to a slowly progressive myeloradiculopathy.[5,11,14]

The two major pathological types include the noninfiltrating vs. infiltrating variants. The former noninfiltrating angiolipomas are more common, well-capsulated lesions; the patient we present had a thoracic lesion.[7] The latter are typically ill-defined, and infiltrate surrounding tissues; there are 18 such cases reported in the literature.[2,5,9]

CASE REPORT

Clinical and radiographic presentation

A 60-year-old male presented with progressive weakness in the right (3/5) greater than the left (4/5) lower extremities. The thoracic magnetic resonance imaging (MRI) revealed an extradural tumor at the D-6-7 level that was hyperintense on both T1 and T2-weighted images and enhanced with contrast [Figure 1]. The lesion was also continuous with the epidural fat and extended several levels cephalad and caudad to D-6-7 [Figure 2]. Further, the axial T2-W MRI showed tumor growing through the left D-6-7 neural foramen where it mimicked a schwannoma.

How to cite this article: Wani AA, Sarmast AH, Ramzan AU, Khan AQ, Chhibber SS, Malik NK, *et al*. Spinal angiolipoma mimicking a schwannoma: A case report. Surg Neurol Int 2018;9:79.
http://surgicalneurologyint.com/Spinal-angiolipoma-mimicking-a-schwannoma:-A-case-report/

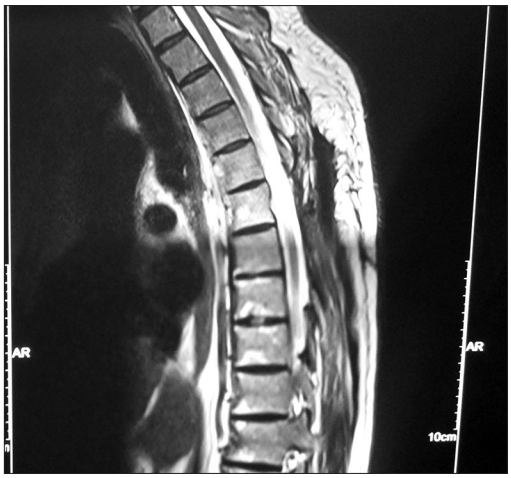

Figure 1: Saggital T2W MRI showing hyperintense extradural tumour at D6-7 level

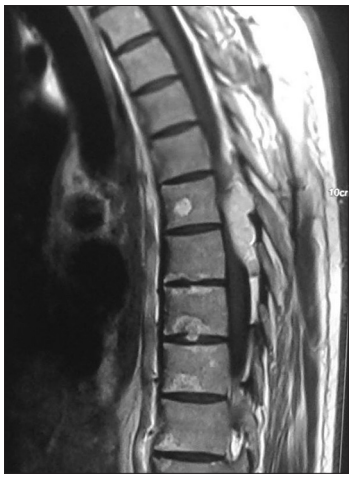

Figure 2: Contrast enhanced MRI showing the tumour is enhancing on contrast and is continuous with epidural fat

Surgical intervention

During the D-6-7 laminectomy, the tumor was found to extend from dorsal to the dura and into the left neural foramen. Although it first appeared to be a schwannoma, its vascular areas containing well-encapsulated fat were consistent with a fat angiolipoma. Histopathology confirmed this diagnosis, documenting multiple small blood vessels and intervening areas of fat. The postoperative MRI showed no evidence of residual tumor, and the patient regained normal function within five postoperative weeks.

DISCUSSION

Benign infiltrating spinal epidural angiolipomas are rare benign tumors They are composed of mature adipocytes and proliferating blood vessels. They predominantly appear in middle-aged females and males.[15] Weight gain in pregnancy may also contribute to an increase in the risk of developing a benign angiolipoma.[12]

These tumors are divided into two histological subtypes: infiltrating and noninfiltrating (benign).[10] Of interest, the prognosis is good for both types if completely excised.[10] Bardosi *et al.* postulated that they originate from adipocytes with secretory activity, and contain lipid-like material in perivascular granules.[1] Most angiolipomas are epidural in location, but few may appear within the spinal cord (intramedullary).

Neurodiagnostic studies of angiolipomas

Diagnosing angiolipomas on X-rays, MRI, and CT studies and differentiating them from schwannomas may be difficult. Plain X-rays are usually negative, only showing changes where infiltration of vertebral bodies by tumor causes a loss of trabeculation.[10] CT scans demonstrate hypodense lesions, and define the extent of bony involvement.[6,14] For example, if vertebral bodies are infiltrated by tumor, they will not enhance, thus distinguishing them from hemangiomas. MRI studies best diagnose these lesions[4,14] that are usually hyperintense/inhomogenous on both T1-WIs and T2-WIs studies. Although they typically, intensely, and homogenously enhance with contrast, some tumors are isointense with epidural fat.[5,14] In the present case, the tumor was hyperintense on T1, with some areas of hypointensity, and was hyperintense on the T2-WI MR, but enhanced with contrast.

Pathology

Pathologically, angiolipomas contain mature adipocytes, fibrinous material, and many small blood vessels. Thin fibrous capsules with fibrous septa usually divide these masses into lobules. There are often fibrinous microthrombi within the lumen of its capillaries (e.g., containing some fibrin thrombi).[8] Although the noninfiltrating and infiltrating angiolipomas are considered histologically benign, the latter may be more locally aggressive, eroding local bone, muscle, neural, and fibrocollagenous tissues.[13]

Surgery

The mainstay of treatment is complete surgical excision.[3,4,14] Noninfiltrating angiolipomas are amenable to total resection, but infiltrating angiolipomas may be difficult to excise completely.[5,13] Nevertheless, even with subtotal removal, most patients have good prognoses as these tumors are slow growing and do not undergo malignant transformation. Here the role of external beam radiation remains controversial.

CONCLUSION

Spinal angiolipomas, both the infiltrating and nonfiltrating variants, are rare, well-defined tumors. The treatment for both types is gross total surgical excision. Notably, as patients with residual, infiltrating lesions have good prognoses, they do not require additional radiation therapy.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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