

## Case Report

### Cauda Equina Cavernoma Mimicking Schwannoma: Case Report

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#### Summary

**Background:** Cauda equina cavernomas are extremely rare benign vascular neoplasms, with less than thirty cases reported in the literature. We report a new case of cauda equina cavernoma successfully operated in order to discuss the surgical technics and the outcomes of these rare lesions.

**Case Description:** A 65-year-old woman presented with low back pain and right sciatica for 6 months' duration without neurological deficit. An enhanced MRI of the lumbar spine showed a homogeneously enhanced mass, located at the L2 level. The patient underwent laminectomy with total excision of the lesion. Macroscopically, the tumor was blackberry shaped and well demarcated. However, it was closely adherent to a thick nerve root which was resection. Histologic examination confirmed a cavernoma. The patient was fully recovered without pain.

**Conclusions:** Cavernomas are well defined but unencapsulated lesions. Clinical symptoms are variable and the lesion may have some differential diagnosis in MRI. These extramedullary tumors are tightly adhered to nerve root which may have to be sacrificed for a total removal with successful results.

**Keywords:** Cavernomas, Cauda Equina, Cavernous Hemangioma

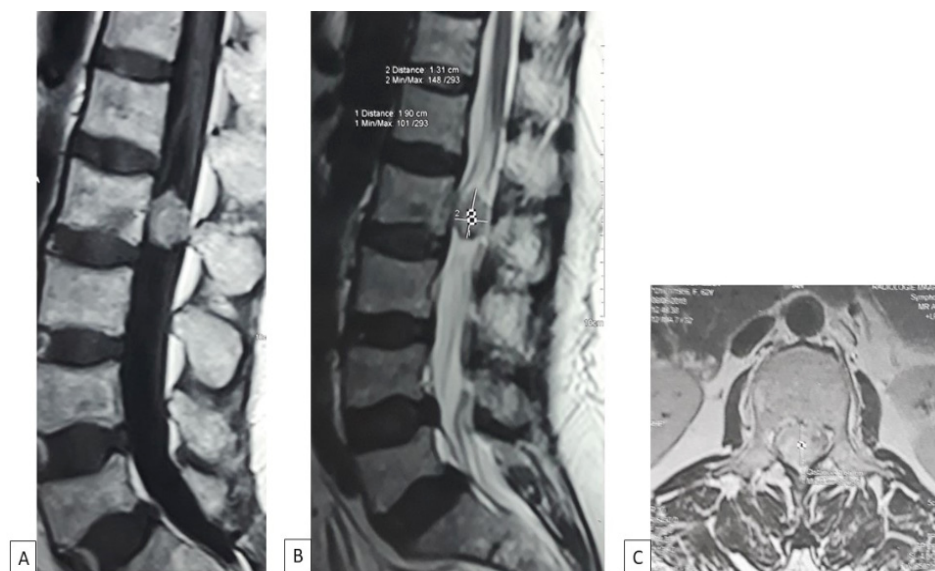
#### Introduction

Cavernomas can be found in all locations within the Central Nervous System (CNS) but rarely in the spine. Spinal cavernomas are reported in only 3% of CNS cases and 6.2% to 7.5% of all intraspinal tumors [2,8]. The cavernous angioma rarely occur in the cauda equina and as unique lesions. Surgery is challenging because their nerve roots adherence. To discuss surgical technic, we report on a woman with a cavernous angioma of the cauda equina presenting with low back pain with sciatica, but without motor or sensory deficit nor sphincter dysfunction who has been successfully operated.

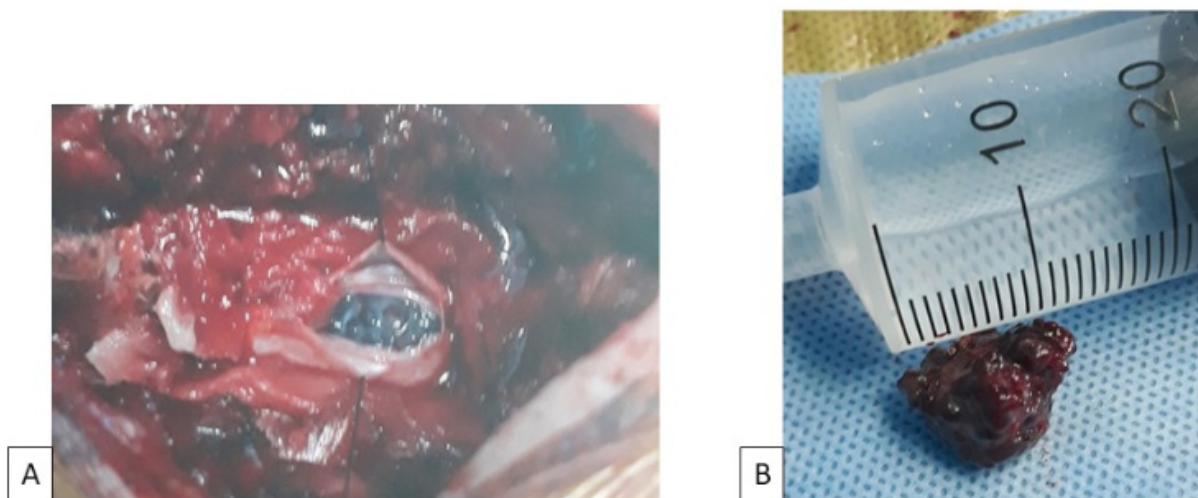
#### Case Report

A 65-year-old woman presented with a 6-month history of

low back pain and mechanical right sciatica, without motor or sensory deficit nor sphincter dysfunction. The patient had no significant family or personal pathological history. The neurologic examination demonstrated unilateral loss of patella reflex without any other neurological disturbance. Magnetic Resonance Imaging (MRI) of the lumbar spine showed a 19 mm x 13 mm iso-intense mass on the T1-weighted images, homogeneous enhancing and high signal intensity. The lesion was surrounded and completely obliterating the spinal canal at the L3 level (Figure 1). The evoked diagnosis was schwannoma and ependymoma. After a laminectomy and opening the dura and arachnoid, blackberry fruit like tumor was surrounded and displacing the caudal nerve roots. It was well circumscribed but adhered closely to a thin root that could not be dissected. After cutting the root, the neoplasm was totally removed (Figure 2). Histopathological examination revealed a cavernous angioma. The postoperative course was uneventful, and the patient remained neurologically intact and was discharged after 3 days without pain.



**Figure 1:** (A) Sagittal lumbar spine, T1- weighted: well-defined, high signal intra Dural lesion, located into L2 level, (B) Coroner lumbar spine, T2-weighted: well-circumscribed, mixed-signal, intradural lesion, located between cauda equine nerve roots. (C) Axial lumbar spine, T2-weighted: well defined, intradural, round, occupying the spinal canal almost completely.



**Figure 2:** Intraoperative view of tumor surrounded by nerve roots of the cauda equina (A). blackberry-like tumor after total removal (B).

## Discussion

Cavernous angioma or Cavernomas are benign vascular malformations, soft, spongy masses, sharply defined, but not encapsulated, and composed of large, cavernous blood-filled vascular spaces. Their apparent origin is from the abnormal development of periarticular vessels, which could explain their close adherence to the nerve roots. They are typically subdural in their location and are predominantly found in the thoracolumbar spine [5]. cavernomas of the cauda equina are extremely rare,

less than 30 cases are reported in the literature at our Knowledge. Most of the tumors originating between L1 and L3 as found in our patient (L3 level). In this location, cavernomas are usually unique, except the case reported by [4]. The tumor may have a different form (mulberry shaped, blackberry-like, nodular), and different colors (purplish, purple-reddish, bluish or black) [1-8]. There is no gender predilection and the patients' mean age at diagnosis is  $49 \pm 18.1$  years, with a wide range, between 18 years and 75 years [7]. Our female patient had 65 years.

The clinical symptoms are usually related to local compression of adjacent nerve roots (low back pain and sciatica, sensitive and motor disturbance of the lower limbs, sphincter dysfunction). The average of beginning of symptoms ranged between ten days and nine years except in a few cases of subarachnoid hemorrhage where the symptoms had acute ones [3,7]. On MRI Cavernomas are often well surrounded lesion with mixed signal intensity on both T1- and T2-weighted images. These are occult lesions on angiography. Differential diagnoses should include schwannomas, paragangliomas, ependymomas and meningiomas. In our case as in all previously reported cases, the tumor was totally removed despite their tight adherence to the nerve roots which can be resected without compromising prognosis [6]. In some cases, the lesion can be easily dissected from attached nerve roots, with rootlets preservation [9]. End bloc resection is advocated to avoid intraoperative bleeding due to its excessive vascularity. The total removal of those lesions is explained by their well-defined aspect despite being unencapsulated. A good recovery with immediate improvement is the natural evolution after adequate surgery. Neurologic deterioration is exceptional and a transient complication that responds to reeducation.

## Conclusion

Cavernous angiomas of the cauda equina are extremely rare vascular lesions. They can be successfully treated by surgery despite sacrifice of the involved nerve. Significant clinical improvement is the rule without recurrence in complete resection cases.

## Patient Consent

The patient has consented to the submission of the case report for submission to the journal.

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