



## Case Report

# Gross total resection of benign retroperitoneal/intra/paraspinal giant schwannoma

Wisnu Baskoro<sup>1</sup>, Muhammad Fakhri Raiyan Pratama<sup>1</sup>, Hanan Anwar Rusidi<sup>1</sup>, Adhika Restanto Purnomo<sup>2</sup>, Bidari Kameswari<sup>3</sup>

Departments of <sup>1</sup>Neurosurgery, <sup>2</sup>Urology, <sup>3</sup>Pathology Anatomy, Soeradji Tirtonegoro Central Public Hospital, Klaten, Indonesia.

E-mail: \*Wisnu Baskoro - snu.nssby@gmail.com; Muhammad Fakhri Raiyan Pratama - mfakhri.dr@gmail.com; Hanan Anwar Rusidi - drhanananwarr@gmail.com; Adhika Restanto Purnomo - adhikarestanto@gmail.com; Bidari Kameswari - bidarikameswari@gmail.com



### \*Corresponding author:

Wisnu Baskoro,  
Department of Neurosurgery,  
Soeradji Tirtonegoro Central  
Public Hospital, Klaten,  
Indonesia.

snu.nssby@gmail.com

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## ABSTRACT

**Background:** Schwannoma is a typically benign nerve sheath tumor. Here, a 30-year-old female underwent resection of a benign retroperitoneal/intra/paraspinal schwannoma.

**Case Description:** A 30-year-old female originally had urological surgery to remove an ill-defined retroperitoneal tumor. When she newly presented with right-side low back pain, and the magnetic resonance documented a recurrent/residual L1–L3 intra/paraspinal lesion, she required an additional tumor excision for the removal of the benign schwannoma.

**Conclusion:** Spinal surgeons, dealing with benign schwannomas located in the retroperitoneal/intra/paraspinal compartments, need to work collaboratively with other surgeons (i.e., in this case, urologists) to achieve gross total tumor excision, and the best long-term results.

**Keywords:** Paraspinal, Schwannoma, Tumor

## INTRODUCTION

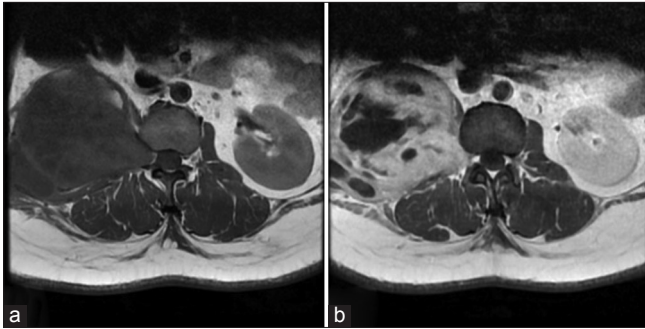
Benign spinal schwannomas account for 25% of all spine tumors (i.e., 0.3–0.5/100,000). They are typically located extradurally, or in the intradural/extramedullary compartment (i.e., 0.3–0.5/100,000).<sup>[1,2,5,6,9]</sup> Magnetic resonance (MR) scans with/without contrast are the diagnostic procedures of choice. Surgery should consist of a gross resection to obtain optimal long-term results.<sup>[3,8]</sup> Here, a 30-year-old female underwent the initial removal of a benign retroperitoneal tumor by urology. When the subsequent MR documented an L1–L3 combined intra/paraspinal lesion, the patient successfully underwent a tumor excision for gross total resection of benign schwannoma.<sup>[8]</sup>

## CASE PRESENTATION

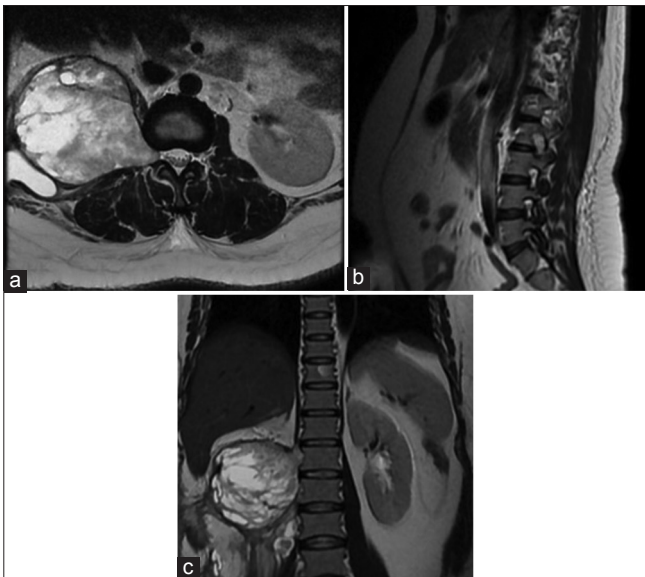
A 30-year-old female presented with 3 months of low back pain. Previously, urology had partially resected an undefined tumor in the peritoneal cavity. When she still complained of low back pain postoperatively, a lumbar MR was performed. It revealed a right-sided intra/paraspinal retroperitoneal hypointense mass on the T1-weighted and inhomogeneous hyperintense lesion on the T2-weighted study that was homogeneously enhanced with contrast [Figures 1 and 2]. The lesion compressed the lateral/foraminally exiting L1–L3 nerve roots and the right kidney. She underwent an L1–L3 gross

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**Figure 1:** Magnetic resonance imaging examination of the (a) axial T1 and (b) axial T1 with contrast.



**Figure 2:** Magnetic resonance imaging examination of the (a) axial, (b) sagittal, and (c) coronal section of the T2-weighted sequence showed an extradural mass lesion that extended to the peritoneal cavity.

total surgical excision. Macroscopic features of the tumor can be seen in Figure 3.

### Pathology

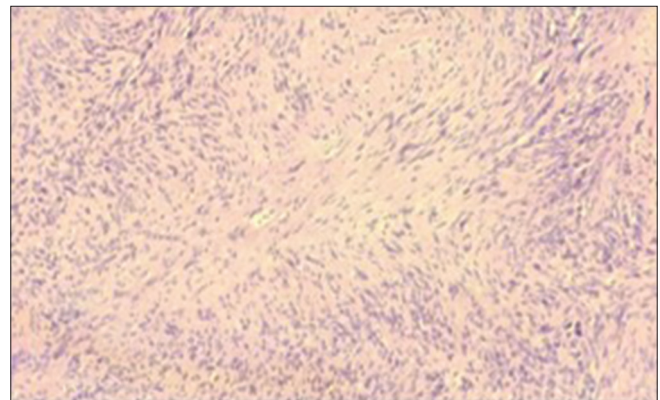
The histopathology was consistent with a benign schwannoma. Slides revealed partial palisading/cells arranged in longitudinal/transverse bundles containing monomorphic features, medium cytoplasm, and round and/or oval spindle nuclei. To confirm the findings, S100 immunohistochemistry demonstrated high-intensity positive staining of the nucleus/cytoplasm involving most tumor cells. Additional spinal muscular atrophy staining of tumor cells was negative. Microscopic features of the tumor can be seen in Figure 4.

### Postoperative course

The patient had less pain on the 1<sup>st</sup> day following the postoperative day, and all symptoms/signs resolved within



**Figure 3:** Macroscopic features of the tumor. It appears as a rubbery, friable brownish tissue.



**Figure 4:** Microscopic features of the tumor. It reveals the densely arranged spindle cells (Antoni A) and the hypocellular cells (Antoni B).

1 week. At 3 postoperative months, she remains disease-free.

### DISCUSSION

Gross total excision of spinal schwannomas is the treatment of choice.<sup>[3-5,7]</sup> Here, the patient was initially treated by urology with a partial resection of a retroperitoneal schwannoma. Due to persistent pain, a lumbar MR was obtained that showed L1–L3 lateral/foraminal tumor extension. She then successfully underwent secondary gross total intra/paraspinal tumor removal. The tumor has not recurred within 3 postoperative months.<sup>[6]</sup> The literature shows that spinal schwannomas are typically benign extradural or intradural/extramedullary lesions that are effectively treated with initial gross total resection [Table 1].

**Table 1:** Summary of schwannoma cases from published articles.

Study	Age (years), sex	Clinical symptom	Onset	Schwannoma type	Outcome
Chen <i>et al.</i> (2019) <sup>[2]</sup>	47, Female	Lower back pain, numbness, and limited movement	3 years	Giant paravertebral schwannoma	3-year follow-up, complete resection 360 laminectomy, no intraspinal, recurrence, involvement or bony invasion.
Laliotis <i>et al.</i> (2021) <sup>[4]</sup>	10, Female	Localized severe right knee pain	6 months.	Intradural extramedullary spinal schwannoma	8-month follow-up, complete resection with posterior laminectomy, no recurrence
Savu <i>et al.</i> (2020) <sup>[6]</sup>	60, Male	Mild dyspnea and reduced tolerance to physical activity	N/A	Thoracic schwannoma	1-year follow, complete resection, no recurrence
Vanegas Cerna <i>et al.</i> (2023) <sup>[8]</sup>	58, Male	Lower back pain radiated to the right leg	6 months	Intradural extramedullary spinal schwannoma	Complete resection eliminated pain and sensory symptoms.
Zhou <i>et al.</i> (2021) <sup>[9]</sup>	40, Female	Intermittent chest and back pain	8 years	Giant thoracic schwannoma	2-year follow-up, complete resection with bone defect reconstruction, no recurrence or spinal instability

N/A: Not available

## CONCLUSION

A 30-year-old female originally underwent resection of an intraperitoneal schwannoma by urology. When symptoms of low back pain persisted, and the lumbar MR identified a right-sided L1–L3 intra/paraspinal extension of the lateral/foraminal mass, the patient successfully underwent secondary gross total tumor resection.

## Ethical approval

The Institutional Review Board approval is not required.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest

## Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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