

Technical Notes

Use of Wiltse approach in lumbar plexus schwannoma: A technical note

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ABSTRACT

Background: Lumbar plexus schwannomas are a rare occurrence in neurosurgery, with few reported cases and no standard surgical approach. This study describes a successful surgical resection with no complications using the Wiltse approach.

Methods: Patient presented with an intra-psoas tumor suggesting schwannoma. We described the surgical technique involved step by step.

Results: The patient recovered from the surgery with no complications. The anatomopathological examination confirmed the schwannoma diagnosis. The post operative magnetic resonance imaging showed complete resection.

Conclusion: This study shows that the use of Wiltse approach, mainly used for classical herniated disc extraforaminal, can be used successfully on Lumbar plexus schwannomas.

Keywords: Lumbar plexus schwannomas, Wiltse approach, Intra-psoas schwannomas

INTRODUCTION

Schwannomas are a benign and slow-growth type of tumor that originated from Schwann cells derived from the neural crest of any myelinated nerve.^[8] Their clinical presentation is varied and dependent on their location and size, with neurological symptoms coming from the compression of a local nerve.^[7] The primary treatment is complete surgical removal, with excellent prognosis if achieved,^[3] as they are chemoradiotherapy resistant.^[10] Regarding lumbar schwannomas, there are various surgical approaches for the resection,^[3] with very few reported cases using the Wiltse posterolateral spinal approach.^[6,9] The present technical note reports a successful surgical resection of an intra-psoas schwannoma using the Wiltse approach, without complications.

CASE AND TECHNICAL DESCRIPTION

Patient, 34-year-old female, with a history of the right thigh paresthesia and pain which limited right leg movement, presented herself to the neurosurgery team. For investigation, a lumbar

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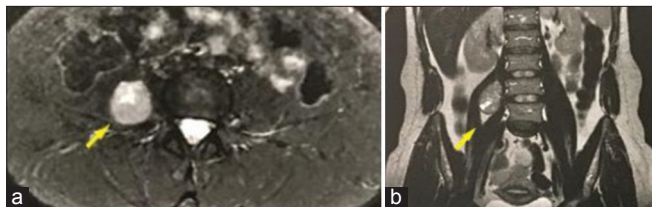


Figure 1: Arrows in axial T2 (a) and coronal T2 (b) showing a heterogeneous lesion inside the right iliopsoas muscle.

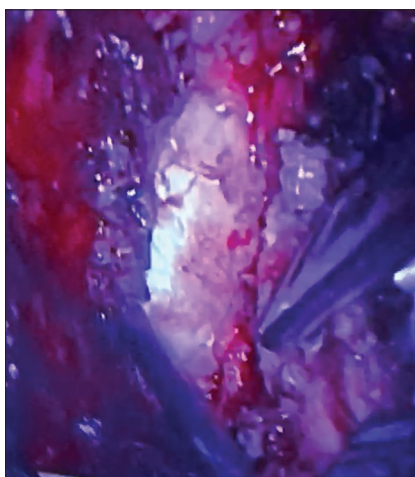


Figure 2: Transoperative picture showing tumor dissection.

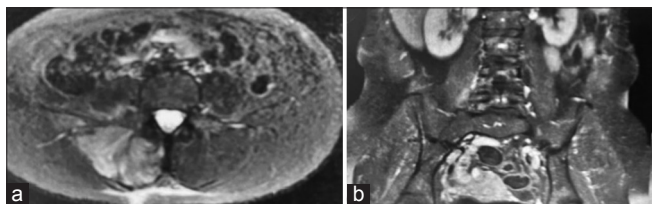


Figure 3: Postoperative axial T2 (a) and coronal T2 (b) showing complete resection of the tumor.

magnetic resonance imaging (MRI) was requested, revealing a right intra-iliopsoas well defined heterogeneous solid lesion in the plane of L4-L5 measuring 5.0 × 3.0 cm in the coronal plane [Figure 1]. It was continuous with the right L3 nerve root, suggestive of schwannoma. Patient was admitted to the hospital for surgical removal.

Under general anesthesia, the neurophysiological monitoring system was installed, tested, and functional. The patient was placed in a prone position, with the testing of neurophysiological potentials going without complications. After the antisepsis and allocation of surgical fields, the lumbar level L3-L4-L5 was marked with intraoperative X-ray. Local anesthesia with lidocaine 2% and bupivacaine 0.5%. The incision was made 3 cm lateral to the midline, at the right side, with radioscopy confirmation on the L4 level.

The multifidus and longissimus muscles were separated, progressing with blunt dissection until the exposition of the transverse process of L3-L5. Confirmation was made with intraoperative X-ray. The right transverse processes of L4 and L5 were both resected for better access to the tumor. A surgical microscope was set in the surgical field for visualization of the tumor lesion, which was seen in the interior of the right psoas muscle, with well-defined borders and a cleavage plane [Figure 2]. The lesion had an aspect of a schwannoma. The tumor was completely resected without complications. During surgery, neurophysiological monitoring was unremarkable. Hemostasis was done with bipolar, biological glue, and Surgicel™. The cavity was cleansed with saline solution. A portovac drain was installed and the cavity was sutured by planes, with the placing of a sterile curative.

RESULTS

The patient was admitted to the recovery room, with a good post anesthesia recovery. She woke up without any neurological deficits. The recovery from the surgery was quick, with hospital discharge 2 days after the surgery, without pain or neurological deficits. During the medical appointment 2 weeks later, she was already completely recovered. The postoperative magnetic resonance imaging showed no residual tumor [Figure 3]. The anatomopathological revealed a schwannoma.

DISCUSSION

Lumbar plexus schwannomas are a rare type of tumor, with limited reported cases worldwide.^[1] There is not a standard surgical approach, with reported cases of laparoscopy interventions^[1] and Wiltse approach.^[9] The Wiltse approach is mainly used for classical herniated disc extraforaminal and lateral recess channels, being also useful in interbody fusion surgeries.^[5] It reduces intraoperative damage due to natural access roads, reduced length of surgery time, less postoperative pain due to undamaged supra and interspinous ligaments,^[5] and reduces the risk of wound breakdown and infection.^[4,5,11] Some disadvantages such as poor visibility, tendency to lateralization of the point of entrance,^[5] and difficulty in localization of the plane of access when closer to the sacral level^[2] require familiarity with this surgical approach. Our choice for the Wiltse approach was due to its natural cleavage plane between the multifidus and the longissimus muscles, providing a better access to the tumor while reducing intraoperative damage and bleeding. Our study shows a successful surgical intervention.

CONCLUSION

The Wiltse approach proved to be useful for the treatment of lumbar plexus schwannoma in the case presented. Due to

the rarity of such disease, more reports have to be done for a consensus to be made regarding the best surgical approach in this condition.

Declaration of patient consent

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

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Conflicts of interest

There are no conflicts of interest.

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