International Journal of Life Sciences, Biotechnology and Pharma Research Vol. 14, No. 3, March 2025 Online ISSN: 2250-3137
Print ISSN: 2977-0122

DOI: 10.69605/ijlbpr_14.3.2025.90

ORIGINAL RESEARCH

Rare presentations of schwannoma: Our experience in a tertiary care hospital

[1]Pooja A Reddy, [2]Dinesh L. Jadhav, [3]Avinash K., [4]Shashikala P

[1]Senior Resident, Department of General Surgery, SS Institute of Medical Sciences and Research, Davangere, Karnataka, India
[2]Professor, Department of General Surgery, SS Institute of Medical Sciences and Research Centre, Davangere, Karnataka, India
[3]Associate Professor, Department of Neurosurgery, SS Institute of Medical Sciences and Research Centre, Davangere, Karnataka, India
[4]Professor, Department of Pathology, SS Institute of Medical Sciences and Research Centre, Davangere, Karnataka, India

Corresponding Author
Pooja A Reddy
Senior Resident, Department of General Surgery, SS Institute of Medical Sciences and Research, Davangere, Karnataka, India

Received: 15Jan, 2025 Accepted: 16Feb, 2025

ABSTRACT
Schwannomas are benign tumors arising from Schwann cells, which form myelin in peripheral nerves. They commonly occur on the flexor surfaces of extremities, neck, mediastinum, retroperitoneum, posterior spinal roots, and cerebellopontine angles. These tumors usually present as solitary, slow-growing dermal or subcutaneous nodules. However, due to their varied morphological and clinical presentations, they are often misdiagnosed. This case series presents five patients diagnosed with schwannoma, confirmed via histopathology.
Key words: Schwannomas, histopathology

INTRODUCTION

Schwannomas, also referred to as neurilemmomas or neuromas, are the most common benign peripheral nerve sheath tumors, originating from Schwann cells[1].Although they are typically slow-growing, well-encapsulated, and solitary, they can occur anywhere in the body, including the extremities, mediastinum, retroperitoneum, and central nervous system. These tumors account for approximately 5% of all benign soft tissue tumors[2].While schwannomas are usually asymptomatic, larger tumors or those in anatomically sensitive regions may cause compressive symptoms such as pain, paresthesia, or motor deficits[3].

In rare instances, schwannomas may present in unusual locations or mimic malignant lesions, adding to the diagnostic challenge. This case series reports five patients with schwannomas in atypical anatomical sites, emphasizing the need for histopathological confirmation to ensure accurate diagnosis and appropriate treatment.

CASE SERIES

CASE 1: Upper Limb Schwannoma A 43-year-old male presented with a swelling on the medial aspect of his left arm for three years, associated with a shocking-type sensation over his left thumb for six months. Examination revealed a firm, non-tender, well-defined swelling. MRI showed a fusiform encapsulated cystic lesion within the medial aspect of the posterior compartment of the left arm in the long head of the triceps brachii. The lesion was excised, and histopathology confirmed schwannoma.

CASE 2: Retroperitoneal Schwannoma A 38-year-old female presented with intermittent abdominal pain for ten years. Examination revealed a solitary, firm, mobile, non-tender mass in the right iliac fossa. Ultrasonography showed a well-defined hypoechoic mass. The patient underwent laparotomy and retroperitoneal mass excision, with histopathology confirming schwannoma.

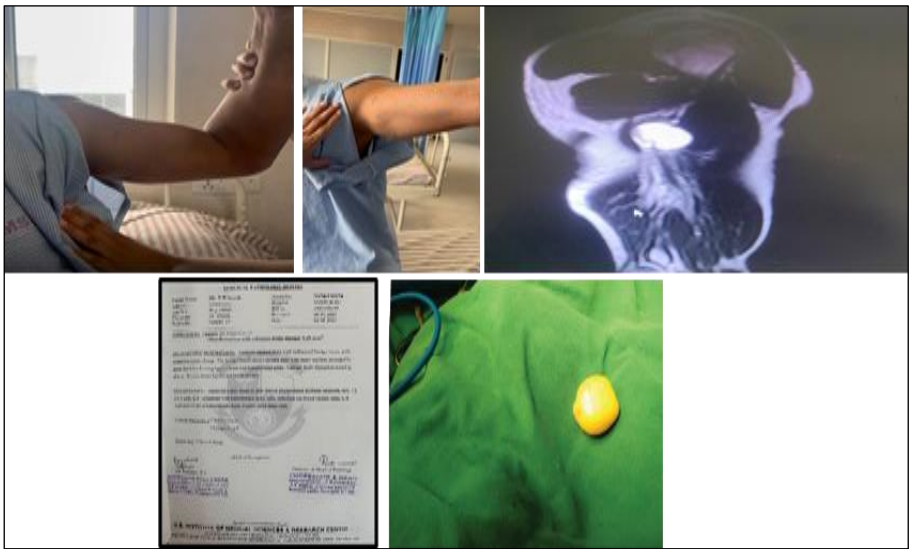
CASE 3: Lumbosacral Schwannoma A 36-year-old female presented with urinary incontinence for eight years and lower back pain for two months. MRI of the lumbar spine revealed an intensely enhancing

DOI: 10.69605/ijlbpr_14.3.2025.90

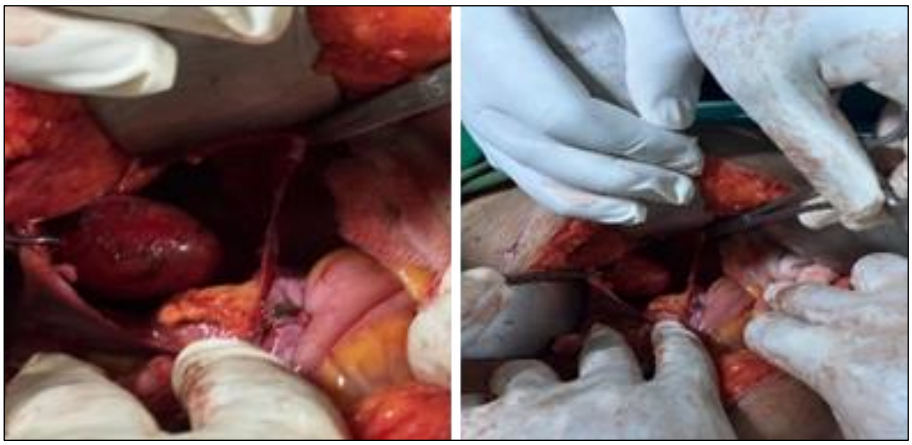
intradural lytic mass lesion at the L5-S1 level, causing smooth scalloping of the posterior vertebral body and lamina. A working diagnosis of myxopapillary ependymoma was made. The patient underwent L5-S1 laminectomy with tumor excision, and histopathology confirmed schwannoma.

CASE 4: Cervical Schwannoma A 53-year-old male presented with left-sided neck pain for three months and swelling on the right side of the neck for two months. MRI showed an isointense enhancing lesion at C3-C4 in the intradural extramedullary space, displacing the spinal cord. The patient underwent C3-C5 laminectomy with lateral mass fusion and excision of the C3 lesion, which was confirmed to be schwannoma upon histopathology.

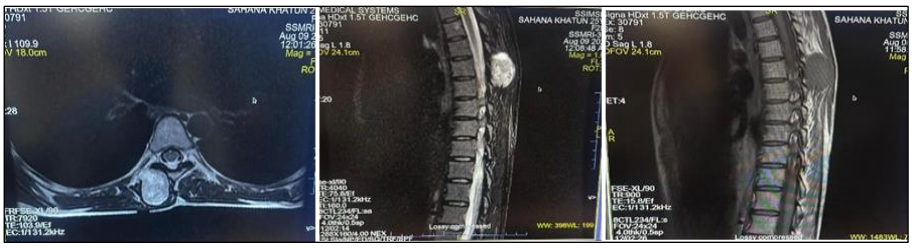
CASE 5: Thoracic Paraspinal Schwannoma A 25-year-old female presented with a painful swelling in the back near the vertebrae for ten years. MRI revealed a well-defined mixed-intensity lesion with heterogeneous enhancement and foci of calcification in the right paraspinal region behind the D6 lamina and transverse process. The tumor was excised, and histopathology confirmed a D6 schwannoma.



Pics-1



Pics-2



Pics-3

DOI: 10.69605/ijlbpr_14.3.2025.90

DISCUSSION

Schwannomas are benign tumors of peripheral nerves, first described by Verocay in 1908. They commonly occur in the third and fifth decades of life, without a racial or gender predilection. Clinically, schwannomas appear as solitary, slow-growing, painless swellings along the nerve course. However, depending on the anatomical location, they may cause neurological symptoms due to nerve compression. The diagnosis is often missed or confused with other soft tissue tumors such as lipoma, neurofibroma, and perineurioma[4].

This case series highlights the varied presentations of schwannomas and the importance of histopathology in confirming the diagnosis.

In Case 1, the upper limb schwannoma presented with a localized swelling and neural symptoms, which were relieved postoperatively. Similar cases in the literature report good surgical outcomes, with functional recovery in affected nerves occurring in most cases within six months post-surgery[5].Case 2 underscores the diagnostic challenge of retroperitoneal schwannomas due to their deep location. Previous studies have reported that such tumors are often mistaken for gastrointestinal or ovarian masses, leading to delays in diagnosis[6].In our case, laparotomy provided a definitive approach, consistent with literature indicating that complete excision offers a favorable prognosis with minimal recurrence risk[7].Case 3 demonstrated a lumbosacral schwannomawith symptoms mimickingmyxopapillaryependymoma. A study highlighted the importance of preoperative MRI characteristics, such as the presence of intradural and extradural components, to differentiate schwannomas from other spinal tumors[8].Our case corroborates this finding, as the final diagnosis was confirmed only after histopathological evaluation. Case 4 presented with a cervical schwannoma causing both pain and spinal cord displacement, necessitating a laminectomy. A study by Emel E *et al*.demonstrated that cervical schwannomas have a higher risk of neurological deficits if not diagnosed early[9].Our case highlights that timely surgical intervention prevents irreversible spinal cord damage and maintains functional outcomes. Case 5 involved a thoracic paraspinal schwannoma with calcifications, an uncommon feature reported in less than 5% of cases. MRI findings in such cases often overlap with neurofibromas,making histopathological confirmationessential[10].Literature supports that calcified schwannomas have a slightly higher surgical difficulty but do not necessarily correlate with malignancy[11].

Overall, this case series underscores the diverse anatomical locations and clinical manifestations of schwannomas. Comparing our findings with prior studies highlights the importance of imaging techniques in preoperative diagnosis and the role of complete surgical excision in optimal patient outcomes. Despite their benign nature, schwannomas may mimic other tumors, reinforcing the need for histopathological evaluation. Clinicians should maintain a high index of suspicion, especially in cases presenting with neurological symptoms, to avoid misdiagnosis and ensure appropriate management.

CONCLUSION

This case series highlights the varied clinical presentations of schwannomas across different anatomical locations, emphasizing the challenges in preoperative diagnosis and the importance of histopathological confirmation. Each case demonstrated the necessity of surgical intervention for symptomatic relief and definitive diagnosis. While imaging modalities such as MRI play a crucial role in identifying tumor characteristics, they are often insufficient to distinguish schwannomas from other soft tissue or neural tumors. Complete surgical excision remains the gold standard for treatment, offering favorable prognoses with minimal recurrence risks.

The findings underscore the need for clinicians to maintain a high index of suspicion for schwannomas, particularly in cases presenting with neurological symptoms or deep-seated masses. Early and accurate diagnosis, coupled with timely surgical intervention, is essential in preventing complications such as nerve dysfunction or spinal cord compression. This case series reinforces the well-documented observation that schwannomas, despite being benign, can pose significant diagnostic and therapeutic challenges, necessitating a multidisciplinary approach for optimal patient outcomes.

REFERENCES

1. Davis DD, Kane SM.Neurilemmoma. Treasure Island, FL: StatPearls; 2023.
2. Sheikh MM, De Jesus O. Vestibular Schwannoma.Treasure Island (FL): StatPearls Publishing; 2025.
3. Hilton DA, Hanemann CO. Schwannomas and their pathogenesis. Brain Pathol. 2014 Apr;24(3):205-20.
4. Loperfido A, Celebrini A, Fionda B, Bellocchi G, Cristalli G. Diagnostic and Therapeutic Strategy for Vagal Schwannoma: Case Series and Literature Review. Medicina (Kaunas). 2023 May 24;59(6):1013.
5. Uerschels AK, Dengler NF, Chihi M, Lenkeit A, Dinger TF, Jabbarli R, Sure U, Hagenacker T, Wrede KH, Gembruch O. Benign peripheral nerve sheath tumors: an interdisciplinary diagnostic and therapeutic challenge. Neurosurg Rev. 2023 Aug 18;46(1):205.
6. Fu H, Lu B. Giant retroperitoneal schwannoma: a case report. Int J Clin Exp Med. 2015 Jul 15;8(7):11598-601.
7. Das Gupta TK, Brasfield RD, Strong EW, Hajdu SI.

DOI: 10.69605/ijlbpr_14.3.2025.90

BenignsolitarySchwannomas(neurilemomas).Cancer. 1969 Aug;24(2):355-66.
8. Takashima H, Takebayashi T, Yoshimoto M, Onodera M, Terashima Y, Iesato N, Tanimoto K, Ogon I, Morita T, Yamashita T. Differentiating spinal intradural-extramedullary schwannoma from meningioma using MRI T_2 weighted images. Br J Radiol. 2018 Dec;91(1092):20180262.
9. Emel E, Abdallah A, Sofuoglu OE, Ofluoglu AE, Gunes M, Guler B, Bilgic B. Long-term Surgical Outcomes of Spinal Schwannomas: Retrospective Analysis of 49 Consecutive Cases. Turk Neurosurg. 2017;27(2):217-225.
10. Bozyigit B, Gorgel A, Elbir SF, Avci A. Ancient Schwannoma as an exceptional thoracic spinal tumor: A case report. Heliyon. 2022 Aug 19;8(8):e10286.
11. Din NU, Fritchie K, Tariq MU, Ahmed A, Ahmad Z. Calcification and ossification in conventional schwannoma: A clinicopathologic study of 32 cases. Neuropathology. 2020 Apr;40(2):144-151.