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Case Report

Pelvic Schwannoma presenting as a suspected broad ligament fibroid in a young woman

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ABSTRACT

Schwannoma (neurilemmoma) is a benign peripheral nerve sheath tumor that commonly occurs in the head, neck, and extremities. Pelvic and retroperitoneal schwannomas are rare and often pose a diagnostic challenge due to nonspecific clinical and radiological features, frequently mimicking common gynecological conditions such as broad ligament fibroids. Laparoscopic excision is a safe and effective treatment modality, offering excellent outcomes when performed with careful identification and preservation of surrounding neurovascular structures.

Keywords: Schawannoma, Retroperitoneal tumor, Broad ligament fibroid, Laparoscopic surgery, Pelviology

INTRODUCTION

Schwannoma (neurilemmoma) is a peripheral nerve sheath tumor and commonly occurs singularly on the head, neck, and trunk.[1] They are extremely rare in the pelvis and the retroperitoneal area (less than 0.5% of reported cases), unless they are combined with von Recklinghausen disease (type 1 neurofibromatosis).[2] The majority of symptoms caused by the tumor are due to the effect of its mass. Surgical resection is enough to treat the tumor.[1] Schwannoma is reported usually as benign, and despite incomplete resection of the tumor, the risk of recurrence and metastasis is low.[1] A schwannoma on the retroperitoneum that was preoperatively misdiagnosed as a broad ligament fibroid in a 27-year-old woman is presented, with a brief review of the literature.

CASE REPORT

A 27 years old para 2 living 2 (normal vaginal delivery) presented with complaints of pain in abdomen and scanty menses since last 5-6 months. She had no other pressure symptoms, systemic presentation or neurological deficit.

On examination, patient vitally stable; blood pressure (BP) -110/70 mm hg; pulse- 88/min; patient had normal body mass index. Abdomen and speculum examination was unremarkable. On bimanual examination – uterus bulky, anteverted, freely mobile, Pouch of Douglas fullness felt with a separate firm regular mass of about 10×8 cm felt in right fornix. Pelvic ultrasound confirmed the findings and suggested broad ligament fibroid of 10×8 cm involving right posterior wall. A contrast magnetic resonance imaging (MRI) pelvis was done suggesting right sided broad ligament fibroid with cystic degeneration, multiple neurofibromas in retroperitoneum, paraspinal muscles and subcutaneous tissue. All haematological and biochemical investigations were normal.

Patient was posted for laparoscopic myomectomy. Her intraoperative findings were uterus with adnexa was normal, Pouch of Douglas was free, a separate mass identified in iliolumbar region measuring approx. 12×9×8 cm was seen. Bilateral retroperitoneal dissection done, ureters and bilateral iliac vessels exposed and encapsulated mass removed in total. In bag morcellation done and sample retrieved. The post-operative recovery was smooth

and patient was discharged on day 2. On follow up no neurological deficit seen.

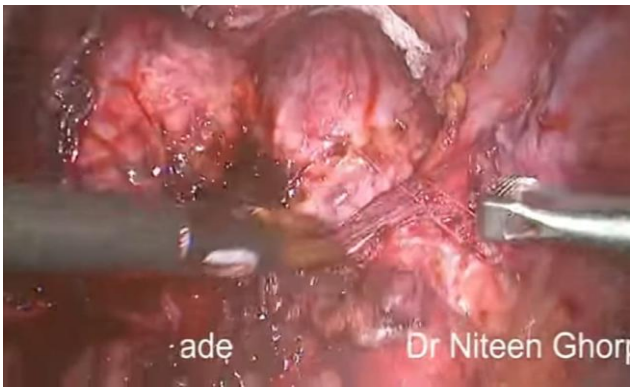

Figure 1: Intra-operative findings of schwanomma in ilio-lumbar region.

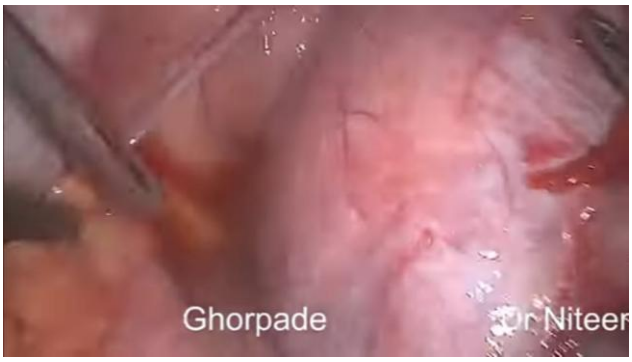

Figure 2: Tumor composed of cells arranged in interlacing fascicles and bundles. The cells are spindle shaped having elongated, wavy nuclei and abundant eosinophil cytoplasm. At places tumor giant cells and mitotic figures noted. Intervening stroma shows mononuclear inflammatory infiltrate comprising of lymphocytes.

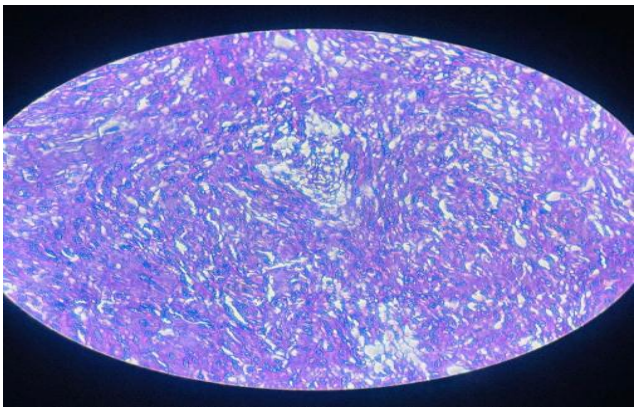

Figure 3: Histopathological slide-Shwanomma/neurofibroma.

On histopathology, it showed tumor composed of cells arranged in interlacing fascicles and bundles. The cells are spindle shaped having elongated, wavy nuclei and abundant eosinophil cytoplasm. At places tumor giant cells and mitotic figures noted. Intervening Stroma shows mononuclear inflammatory infiltrate comprising of lymphocytes.

Immunohistochemistry confirmed Schawannoma with positive Vimentin, S-100 and SOX 10 and negative CD 10, desmin.

DISCUSSION

Schwannomas, also known as neurilemmomas, are benign tumors originating from Schwann cells of peripheral nerve sheaths. Schwannomas occur at all ages but most commonly in persons between the ages of 20 and 50 years and represents approximately 5% of benign soft-tissue neoplasm.[4] They most commonly occur in the head, neck, and extremities, while pelvic and retroperitoneal schwannomas are exceedingly rare, accounting for less than 0.5% of all schwannomas.[1] Their rarity and nonspecific presentation often lead to preoperative misdiagnosis, particularly in women where they may mimic common gynecological pathologies such as broad ligament fibroids or adnexal masses.

Pelvic schwannomas usually grow slowly and remain asymptomatic for long periods. When symptoms occur, they are typically due to mass effect on adjacent structures and include pelvic pain, pressure symptoms, or menstrual irregularities. Neurological symptoms are uncommon unless there is direct nerve involvement. In the present case, the patient presented with chronic abdominal pain and scanty menses without any neurological deficits, contributing to the initial suspicion of a gynecological mass.

Imaging plays a crucial role in evaluation; however, definitive preoperative diagnosis remains challenging. Ultrasonography often lacks specificity and may misidentify schwannomas as fibroids, especially when located near the uterus or within the broad ligament. MRI is considered the imaging modality of choice, as it provides better soft tissue characterization. Typical MRI features of schwannoma include a well-defined encapsulated mass, isointense or hypointense on T1-weighted images and heterogeneously hyperintense on T2-weighted images, sometimes with cystic degeneration. Despite MRI in this case suggesting the possibility of neurofibromas, the dominant diagnosis remained a broad ligament fibroid, highlighting the diagnostic ambiguity associated with such tumors.

Surgical excision is the treatment of choice for retroperitoneal schwannomas, both for definitive diagnosis and symptom relief. Complete excision is usually curative, and recurrence is rare even after incomplete resection. Laparoscopic management, as performed in this case, offers excellent visualization of retroperitoneal anatomy, allows meticulous dissection of vital structures such as ureters and iliac vessels, and is associated with faster

recovery and minimal morbidity. Laparoscopic resection is safe, feasible, and effective for retroperitoneal schwannoma.[5] However, it requires advanced surgical expertise due to the proximity of major neurovascular structures.

Histopathological examination remains the gold standard for diagnosis. Classical findings include spindle-shaped cells arranged in fascicles with Antoni A and Antoni B areas. Immunohistochemistry is essential to confirm the diagnosis, with strong positivity for S-100 protein, SOX-10, and vimentin, and negativity for smooth muscle markers such as desmin and CD10, effectively differentiating schwannoma from leiomyoma and other mesenchymal tumors. The hallmark pattern of the benign variants is an alternation of these Antoni A and B areas, with a diffuse positivity for S100 protein in the cytoplasm of the tumor cells. Malignant degeneration of schwannomas is extremely rare, but when present, they act as high-grade sarcomas with a high likelihood of producing local recurrence and distant metastasis.[3] The findings in this case were consistent with a benign schwannoma.

This case underscores the importance of considering rare retroperitoneal tumors like schwannoma in the differential diagnosis of suspected broad ligament fibroids, especially when imaging findings are atypical or inconsistent. Awareness of this entity among gynecologists is essential to avoid intraoperative surprises and to ensure appropriate surgical planning. Early recognition and complete surgical excision result in excellent prognosis with minimal risk of recurrence.

CONCLUSION

Retroperitoneal schwannoma is a rare benign tumor that can closely mimic common gynecological conditions such as broad ligament fibroids, leading to diagnostic challenges. Due to nonspecific clinical features and overlapping imaging findings, preoperative identification is often difficult. This case highlights the importance of considering retroperitoneal schwannoma in the differential diagnosis of pelvic masses, especially when imaging findings are atypical. Laparoscopic excision provides both definitive diagnosis and effective treatment, offering excellent visualization, minimal morbidity, and rapid recovery. Histopathological examination with immunohistochemistry remains essential for confirmation. Early recognition and complete surgical removal result in an excellent prognosis with a low risk of recurrence.

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