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Schwannoma of the Anterior Abdominal Wall Masquerading as an Obstructed Incisional Hernia: A Diagnostic Challenge

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Abstract: Schwannomas are benign peripheral nerve sheath tumors that rarely occur in the anterior abdominal wall. We report a case of a patient with a previous history of stoma closure who presented with a painful, irreducible swelling at the stoma closure site, clinically suggestive of an obstructed incisional herni Surgical exploration was planned which revealed a well-defined anterior abdominal wall mass without any hernial defect or bowel involvement. Complete excision was performed, and histopathological examination confirmed the diagnosis of schwannoma. This case highlights the importance of considering rare soft tissue tumors in the differential diagnosis of abdominal wall swellings, particularly in postoperative patients where more common diagnoses such as incisional hernia may be presumed.

Keywords: *Schwannoma, Anterior Abdominal Wall Obstructed Incisional Hernia, Stoma Closure, Abdominal Wall Tumour.*

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I. INTRODUCTION

Schwannomas are benign, slow-growing tumors arising from Schwann cells of the peripheral nerve sheath. They commonly occur in the head, neck, and extremities, while involvement of the anterior abdominal wall is exceedingly rare. Patients typically present with a painless or slowly enlarging mass, although pain and tenderness may occur due to nerve compression. Owing to their rarity and nonspecific clinical and radiological features, anterior abdominal wall schwannomas are often misdiagnosed as more common conditions such as hernias, lipomas, or other soft tissue tumors. Histopathological examination remains the gold standard for diagnosis, and complete surgical excision is usually curative with an excellent prognosis.

Fig 1 Anterior Abdominal Wall Swelling

Routine blood investigations were within normal limits. USG was suggestive of 12mm gap defect in right paraumbilical region through which herniation of omentum noted, p/o irreducible hernia. A CECT (Abdomen+Pelvis) revealed a 50*56*55mm sized well circumscribed tissue noted in the right paraumbilical region in soft tissue plane, with heterogenous post contrast enhancement. Possibility of neoplastic etiology. FNAC was done but it was unremarkable. Surgical resection of the mass was proposed and the patient was then operated under general anesthesia. Wide local excision of mass was done and 1cm margin was kept considering neoplastic etiology.

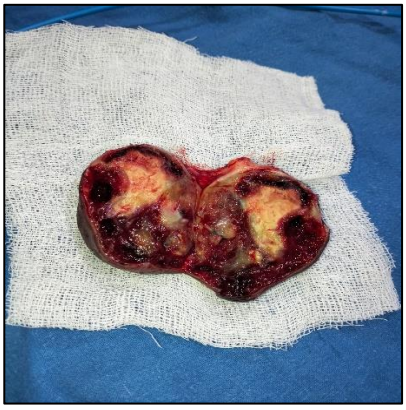

Fig 2 Gross Specimen

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The swelling was exclusively involving the subcutaneous plane without any connection to the musculofascial layer or the parietal peritoneum of the abdominal wall. Pathological examination of the resected specimen (Fig 2) revealed an encapsulated mass measuring 5x6x5 cm with heterogeneous appearance and presence of multiple areas of hemorrhagic, mucoid changes and necrosis was observed. Post-operative period was uneventful. Patient was then discharged on POD 11.

Histopathology was conclusive of Schwannoma with secondary vascular and degenerative changes.

II. DISCUSSION

Peripheral nerve sheath tumors comprise a diverse group of neoplasms arising from the cellular components of peripheral nerves, including Schwann cells, perineural cells, and fibroblasts. They are broadly classified into benign tumors, such as schwannomas and neurofibromas, and malignant peripheral nerve sheath tumors. These lesions may occur sporadically or in association with neurofibromatosis syndromes.

Schwannomas are benign, encapsulated, and slowly enlarging tumors derived entirely from Schwann cells. Although they can develop anywhere along the course of peripheral nerves, they are most commonly found in the head and neck region and extremities. Less frequent sites include the retroperitoneum, mediastinum, pelvis, perineum, and gastrointestinal tract. Occurrence within the anterior abdominal wall is exceptionally uncommon, with only a limited number of cases reported in the literature.

Schwannomas can present at any age but are most frequently diagnosed between the fourth and sixth decades of life, without a clear gender or racial predilection.

Clinically, they usually manifest as solitary, slow-growing masses and are often asymptomatic; however, progressive enlargement may lead to pain, paresthesia, or other symptoms due to compression of adjacent nerves. The clinical presentation largely depends on the tumor location, and superficial lesions may remain unnoticed until detected on physical examination or imaging studies.

Imaging plays an important role in their evaluation, with magnetic resonance imaging (MRI) being the most useful modality for characterization. On computed tomography (CT), schwannomas typically appear as well-circumscribed soft-tissue masses with mild contrast enhancement, while MRI generally demonstrates hypointense signals on T1-weighted images and hyperintense signals on T2-weighted images. Larger or long-standing lesions may exhibit heterogeneous enhancement and degenerative changes such as cystic degeneration, calcification, fibrosis, or hyalinization.

Histopathologically, schwannomas are encapsulated tumors composed of spindle-shaped cells arranged in characteristic Antoni A and Antoni B patterns, often with Verocay bodies.

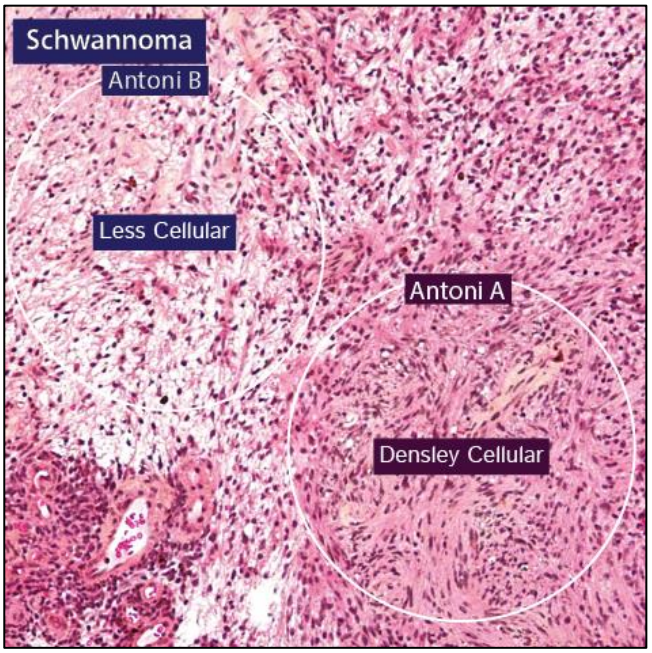

Fig 3 Histopathology of Schwannoma

Strong positivity for S-100 protein on immunohistochemistry supports the diagnosis and helps distinguish schwannomas from other peripheral nerve sheath tumors.

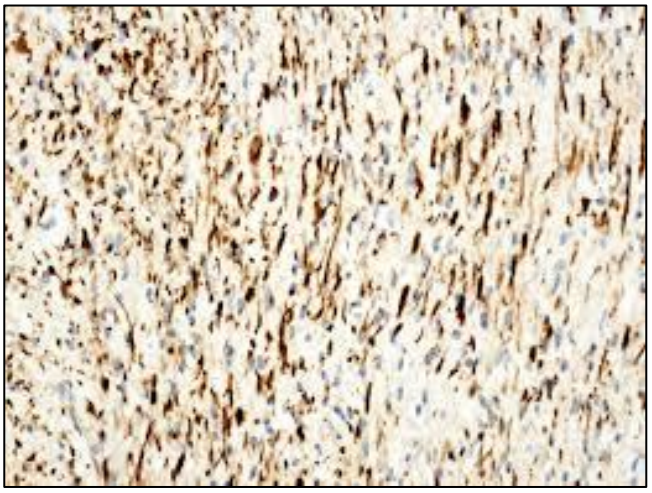
Fig 4 Diffuse Positive Staining for S100

Complete surgical excision with clear margins remains the treatment of choice and is usually curative, with a low risk of recurrence and an exceedingly rare potential for malignant transformation. Despite their rarity, schwannomas should be included in the differential diagnosis of anterior abdominal wall masses.

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