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Schwannoma of the Right Groin: A Rare Clinical Presentation Mimicking Benign Soft Tissue Tumors

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Abstract:

Schwannoma is a benign, encapsulated peripheral nerve sheath tumor arising from Schwann cells. It commonly occurs in the head and neck region and extremities; however, involvement of the groin is exceedingly rare and often poses diagnostic challenges due to its nonspecific presentation. We report a case of a 50-year-old female presenting with a painless, gradually enlarging swelling over the medial aspect of the right groin for one year. Clinical examination revealed a 2 × 2 cm soft, mobile, non-tender, multilobulated nodule with normal overlying skin. Differential diagnoses included dermatofibroma, lipoma, dermoid cyst, nodular fasciitis, palisaded encapsulated neuroma, and squamous cell carcinoma. Excisional biopsy was performed. Histopathological examination demonstrated a well-encapsulated tumor with alternating hypercellular Antoni A and hypocellular Antoni B areas, along with Verocay bodies. Immunohistochemistry showed strong S-100 positivity, confirming the diagnosis of schwannoma. The postoperative course was uneventful with no recurrence. This case highlights the importance of considering schwannoma in the differential diagnosis of groin swellings and emphasizes the role of histopathology and immunohistochemistry in definitive diagnosis.

Keywords:
Schwannoma; Neurilemmoma; Groin swelling; Antoni A; Verocay bodies; S-100 protein

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Introduction

Schwannomas are benign tumors originating from Schwann cells of the nerve sheath, rarely presenting in the groin or inguinal region where they often mimic common benign soft tissue tumors like lipomas, cysts, or hernias due to their slow growth and nonspecific imaging features. [1,2] A schwannoma in the right groin represents an exceptionally uncommon clinical scenario, potentially causing localized pain, swelling, or neurological symptoms such as tingling if compressing nearby nerves like the ilioinguinal or genitofemoral nerves, leading to frequent misdiagnosis on ultrasound or MRI as inflammatory or malignant lesions.[3].

Case Presentation

Patient Demographics & History A 50-year-old female presented with a painless swelling over the medial aspect of the right groin for a duration of one year. The swelling had gradually increased in

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size. There was no history of trauma, infection, or similar lesions elsewhere. The patient had no significant comorbidities and was a non-smoker.

Clinical Examination On examination, a solitary, soft, mobile, non-tender, multilobulated nodule measuring approximately 2 × 2 cm was noted over the medial aspect of the right groin. The overlying skin appeared normal with no ulceration or pigmentation. There was no regional lymphadenopathy. No neurological deficits such as paresthesia, tingling, or weakness were noted.

Differential Diagnoses Considered
Dermatofibroma
Lipoma
Dermoid cyst
Palisaded encapsulated neuroma
Nodular fasciitis
Squamous cell carcinoma
Schwannoma

Diagnostic Workup An excisional biopsy was performed under local anesthesia. The specimen was sent for histopathological examination.

Histopathological Findings Microscopic examination revealed a well-circumscribed encapsulated dermal tumor composed of alternating hypercellular (Antoni A) and hypocellular (Antoni B) areas. Antoni A areas showed spindle-shaped cells arranged in fascicles with nuclear palisading and formation of Verocay bodies. Antoni B areas demonstrated loosely arranged cells in a myxoid stroma. No atypia, necrosis, or significant mitotic activity was observed.

Immunohistochemistry Tumor cells showed strong diffuse positivity for S-100 protein, confirming the diagnosis of schwannoma.

Treatment & Outcome Complete surgical excision was performed. The postoperative course was uneventful. The patient showed no evidence of recurrence on follow-up.
A middle-aged female presented with a solitary swelling over the left cheek of six months duration. The lesion was insidious in onset and gradually increased in size. On dermatological examination, a well-defined, dome-shaped erythematous nodule measuring approximately 1 cm in diameter was observed over the left cheek **(Figure 1)**. The surface was smooth and shiny, and the lesion was firm, non-tender, and not fixed to underlying structures. No regional lymphadenopathy was noted. An excisional biopsy was performed. Histopathological examination revealed a well-circumscribed dermal tumor **(Figure 2)**. On higher magnification, there were Antoni A areas with characteristic Verocay bodies **(Figure 3)**. Immunohistochemistry demonstrated strong S-100 positivity, confirming the diagnosis of schwannoma **(Figure 4)**. Complete surgical excision of the lesion was performed.

Discussion

Our case report describes a classic solitary dermal schwannoma on the left cheek of a middle-aged female, presenting as a 1 cm firm, non-tender, dome-shaped erythematous nodule of 6 months duration, with histopathology showing a well-encapsulated tumor featuring alternating Antoni A (spindle cells in fascicles, nuclear palisading, Verocay bodies) and Antoni B (loose myxoid stroma) areas, no atypia/necrosis/mitoses, strong S-100 positivity, and successful complete excision without recurrence. Unlike our asymptomatic, rapidly progressive (6 months) small lesion, many head/neck schwannomas grow indolently over years and cause symptoms; for instance, a cheek schwannoma series reported larger sizes (avg. 2-3 cm), pain/tenderness in 50%, and aesthetic concerns, often misdiagnosed preoperatively as cysts/lipomas/nevi.[4-6] Moreover, our histological findings precisely match textbook schwannoma features which shows encapsulated, biphasic Antoni patterns, Verocay bodies, and diffuse S-10, but contrast with variants by showing secondary changes wich includes cystic degeneration/hyalinization (16%), ulceration (11%), foam/epithelioid cells, or clear cell areas in 55% upper limb/55% trunk past studies.[7,8] Thus, no necrosis aligns with benignity, unlike rare ancient schwannomas with degenerative atypia mimicking sarcoma. Hence, complete excision in our case yielded uneventful recovery, mirroring 100% cure rates in dermal/facial reports with no recurrence, though deeper head/neck schwannomas risk nerve deficits (8-20% facial nerve cases) or incomplete resection if >5 cm.[9-11]

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The diagnosis of schwannoma is primarily histopathological, characterized by well-circumscribed lesions with Antoni A and Antoni B areas, along with Verocay bodies **(Figures 2 and 3)**. Immunohistochemical staining typically shows strong S-100 positivity, which helps confirm Schwann cell origin **(Figure 4)**.

Conclusion

Schwannoma of the groin is a rare clinical entity that may mimic other benign soft tissue tumors. A high index of suspicion, along with histopathological and immunohistochemical evaluation, is essential for accurate diagnosis. Complete surgical excision provides excellent prognosis with minimal risk of recurrence.

Declarations

Patient Consent: Written informed consent was obtained from the patient for publication of clinical details and images. **Conflicts of Interest:** None. **Funding:** No external funding.

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Figure Legends

Figure 1. Clinical image showing a solitary multilobulated nodule over the right groin.

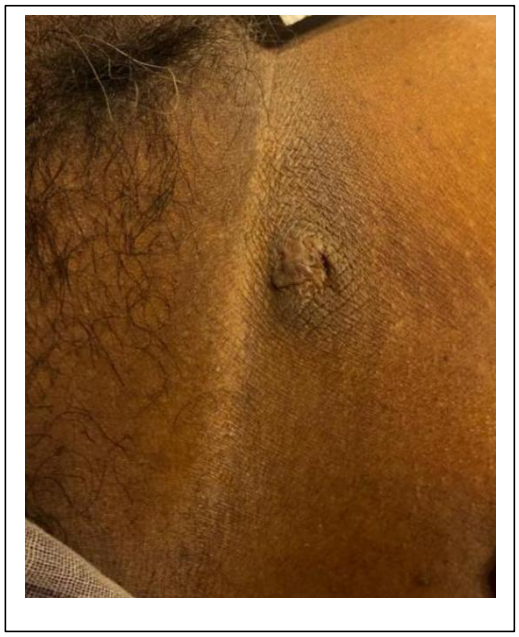

Figure 2. Histopathology showing a well-circumscribed dermal tumor.

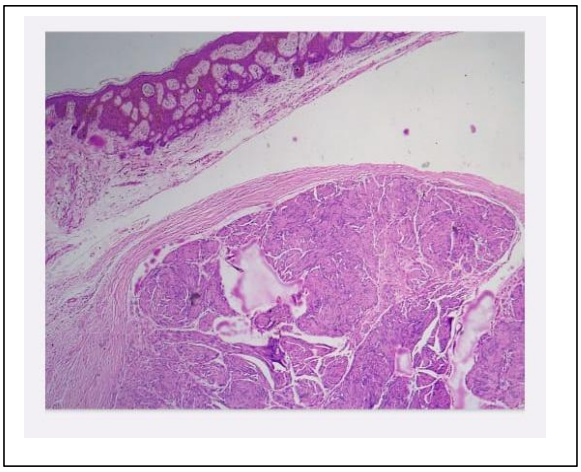

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Figure 3. Histopathology showing Antoni A areas with Verocay bodies (H&E, high power).

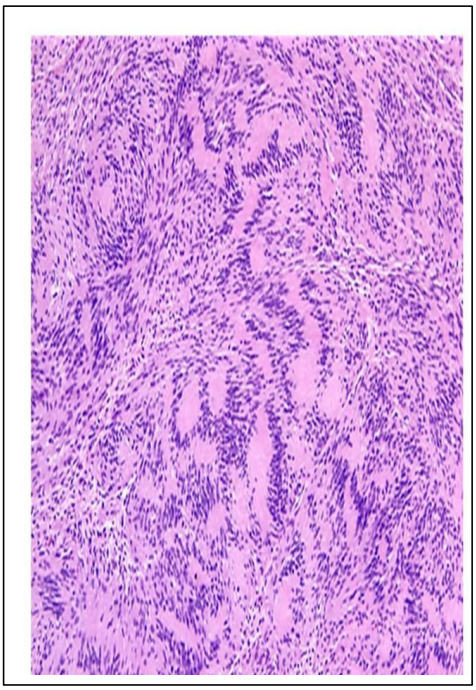

Figure 4. Strong S-100 immunopositivity confirming schwannoma.