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Unmasking a Facial Papule: Clinical Challenges in Cutaneous Schwannoma Diagnosis

Maria Ahmad[1], Mohammad Alajmi[2], Rashmi Reddy[2], G. Stewart[2]

[1]The Royal Wolverhampton NHS Trust,mariaahmad22@googlemail.com, corresponding author
[2]The Dudley Group NHS Foundation Trust, mohammad.alajmi@nhs.net
[3]The Dudley Group NHS Foundation Trust, rashmi.reddy@nhs.net
[4]The Dudley Group NHS Foundation Trust, graeme.stewart2@nhs.net

Corresponding Author

Maria Ahmad
The Royal Wolverhampton NHS Trust,mariaahmad22@googlemail.com

Abstract:

Cutaneous schwannomas are uncommon benign peripheral nerve sheath tumours arising from differentiated Schwann cells and account for less than 5% of all schwannomas. They typically present as slow-growing, asymptomatic nodules with nonspecific clinical features, making histopathological examination essential for diagnosis. We report the case of a 33-year-old woman who presented with a 12-month history of an enlarging, intermittently pruritic and mildly tender 4 × 4 mm shiny papule on the right cheek. Dermoscopy demonstrated radial telangiectatic vessels without pigmentation. Clinical differentials included an adnexal tumour and compound naevus. The lesion was excised, and histology revealed a partly circumscribed multinodular dermal spindle cell lesion with variable cellularity and bland spindle cells arranged in fascicles with palisading. No atypia or increased mitotic activity were identified. Immunohistochemistry demonstrated diffuse S100 positivity with negative desmin and smooth muscle actin staining, consistent with a benign schwannoma. The excision site healed well with no recurrence at follow-up. This case highlights the diagnostic challenge posed by small facial papules due to their variable and nonspecific presentation. Accurate diagnosis relies on clinicopathological correlation, with histology and immunohistochemistry playing a central role. Cutaneous schwannoma should be considered in the differential diagnosis of solitary facial lesions to ensure appropriate management and reassurance.

Keywords:

Cutaneous schwannoma; Peripheral nerve sheath tumour; Schwann cells; Facial papule; Dermoscopy

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Introduction

Schwannomas are benign neoplasms composed of differentiated Schwann cells arising from the nerve sheath of cranial, spinal, or peripheral nerves, most commonly from the eighth cranial nerve. They usually arise spontaneously, though they may also occur in association with conditions such as Neurofibromatosis Type 2, schwannomatosis, and Carney complex (1). Vestibular schwannomas are the most common subtype, accounting for approximately 60% of all benign schwannomas (2). Most peripheral nerve neoplasms are benign, with malignant nerve sheath tumours being extremely rare, rapidly growing, and carrying a poor prognosis.

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Cutaneous schwannomas (CS) arise from peripheral nerves and typically present as asymptomatic, slow-growing lesions on the upper limbs, head or neck at the subcutaneous layer or deeper (3,4). Cases typically occur between the ages of 50 and 60, with no gender predilection (5). Histopathology is diagnostic, characterised by architectural patterns known as Antoni A and Antoni B areas (6). Management is usually surgical excision, with low recurrence rates due to the well-encapsulated nature of these tumours (4).

Case Report

A 33-year-old woman presented to dermatology with a 12-month history of an enlarging lesion on the right cheek, just above the jawline. The lesion had doubled in size since its appearance and was intermittently pruritic and slightly tender. She had no relevant past medical history, including neuroendocrine disorders, and her only regular medication was sertraline.

On examination, there was a 4 × 4 mm shiny, slightly umbilicated papule (figure 1). Dermoscopy revealed no pigmentation but a few radial telangiectatic vessels. No other skin lesions were noted.

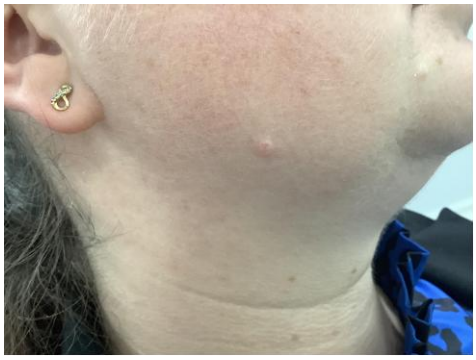

Figure 1: Cutaneous schwannoma: Clinical appearance at presentation to Dermatology of a shiny, slightly umbilicated 4 × 4 mm papule on the right cheek.

Initial differentials included an adnexal tumour or a compound nevus. The lesion was excised shortly after presentation.

Histology revealed a partly circumscribed, multinodular dermal spindle cell lesion with clefting and areas of variable cellularity. Bland spindle cells were arranged in fascicles and a palisaded pattern (figure 2). The stroma was variably fibrotic to myxoid and contained scattered mast cells. No atypia or increased mitoses were observed. Immunohistochemistry showed diffuse S100 positivity and negativity for desmin and SMA (figure 3), consistent with a benign neural tumour favouring schwannoma. A solitary circumscribed neuroma was considered in the differential diagnosis. No evidence of dysplasia or malignancy was found.

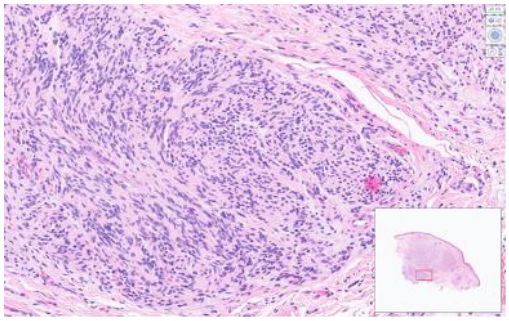

Figure 2: Cutaneous schwannoma: Bland spindle cells arranged in fascicles and palisaded pattern. (H&E; 20× magnification).

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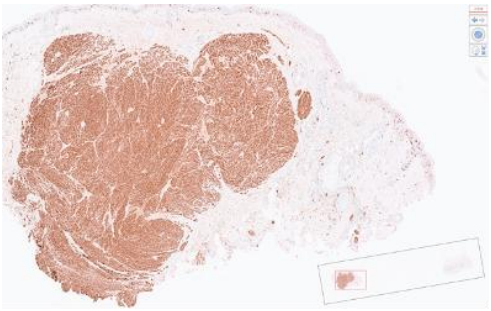

Figure 3: Cutaneous schwannoma: Spindle cells show diffuse S100 positivity on immunohistochemistry (IHC S100; 4× magnification).

At follow-up, the excision site had healed well with no residual tumour, and no other lesions were observed. The patient was subsequently discharged from dermatology care.

Discussion

Cutaneous schwannomas (CS) have variable presentations, influenced by lesion depth. Superficial dermal tumours may appear as plaques, whereas deeper lesions present as nodules (7). Clinically, these tumours can resemble a wide range of lesions, including lipomas, cysts, desmoid tumours, adnexal tumours, and, as in this case, solitary circumscribed neuromas. SCNs are usually asymptomatic nodules on the face, highlighting the importance of histopathology in differentiating these entities.

CS are largely asymptomatic, though deeper lesions may compress adjacent nerves or, rarely, vascular structures (4). Sporadic cases, such as highlighted by this report, account for approximately 90% of CS, with only 2% associated with neurofibromatosis type 2 (8). CS is uncommon, representing less than 5% of all schwannomas (9), and may present in diverse locations, including pedunculated masses and parotid swellings (9,10).

Histopathology plays a key role in diagnosis. Most benign nerve sheath tumours are S100 positive, although non–neural crest–derived tumours may also express S100; SOX10 is more specific (11). CS demonstrates two characteristic patterns: Antoni A, with hypercellular spindle cells and possible Verocay bodies, and Antoni B, with hypocellular, loosely structured tissue (3). Negative desmin and SMA staining helps exclude smooth muscle tumors, reinforcing the role of immunohistochemistry in differential diagnosis.

Management is typically surgical excision, with low recurrence rates due to encapsulation. Observation may be considered for asymptomatic lesions, but facial tumours may warrant excision for cosmetic reasons. For larger peripheral nerve tumours, enucleation can preserve nerve function (9).

This case emphasises the diagnostic challenge of cutaneous schwannomas due to their variable and nonspecific presentation. Accurate diagnosis relies on a combination of clinical assessment, histopathology, and immunohistochemistry. Full history and examination may also help identify multiple lesions, which can suggest underlying syndromes. Clinicians should consider cutaneous schwannoma in the differential diagnosis of small facial papules. Clinicopathological correlation is essential to ensure accurate diagnosis and appropriate management.

Consent for Publication

Written informed consent was obtained from the patient for publication of this case report and any accompanying images

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