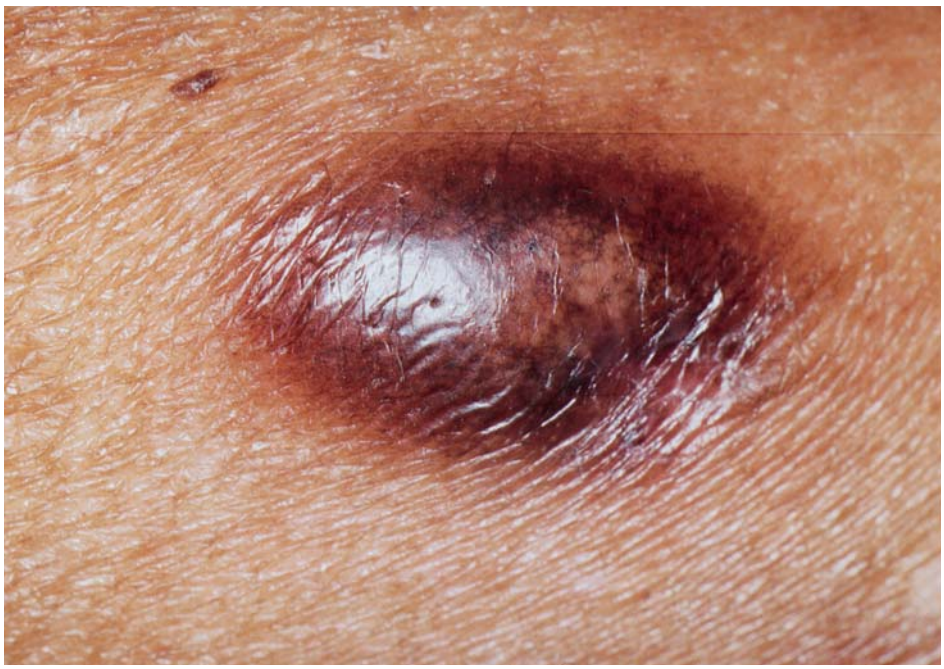
What Is Your Diagnosis?



A 55-year-old African American woman presented with a slowly enlarging painful tumor of one year's duration on the right flank. Review of systems was unremarkable. During a physical examination, a solitary 1.0×1.5-cm, firm, tender, dark brown oval nodule was found on the patient's right superior flank without associated lymphadenopathy.

PLEASE TURN TO PAGE 23 FOR DISCUSSION

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The authors report no conflict of interest.

The Diagnosis: Granular Cell Tumor

Granular cell tumor (GCT) is an uncommon tumor of neural cell origin, specifically from Schwann cells.[1] The most frequent location is the head and neck, especially the tongue, but GCTs can be found at any site both externally and internally (Figure 1). GCTs predominantly affect black women between the third and sixth decades of life.[2-7] Although GCTs are often solitary lesions, cases of multiple tumors have been reported.[1] Most GCTs exhibit benign biological behavior, but malignant behavior may be seen in approximately 1% to 2% of all GCTs.[4,8]

Morphologically, GCTs are rather nondescript. They are rarely more than 3 cm in diameter and often have a smooth surface, though they can be hyperkeratotic.[2] Clinically, GCTs are most often misdiagnosed as a fibroma or sebaceous cyst.[7] The clinical differential also may include leiomyosarcoma, dermatofibroma, papilloma, prurigo nodularis, carcinoma of the tongue, fibrosarcoma, granuloma, lipoma, or a lymph node.[2,7] Typically, these lesions are asymptomatic if localized to the skin.

Histopathologically, GCT presents as a nonencapsulated collection of irregularly arranged sheets and nests of large polyhedral cells with pale granular eosinophilic cytoplasm and giant lysosomal granules (Figure 2). The overlying epidermis often demonstrates pseudoepitheliomatous hyperplasia that can be misinterpreted as squamous cell carcinoma on hematoxylin-eosin (H&E) staining.[1] These tumors may infiltrate adjacent tissues, such as muscle, subcutaneous fat, and nerves.[2] Most GCTs stain positive with S100 immunostain (Figure 3), which may be a useful adjuvant to regular H&E examination. This is particularly true when attempting to clear the margins because S100 staining may better demonstrate perineural extension.[9]

The primitive polypoid GCT, reported rarely in the literature, is a unique variant of the GCT and differs from the traditional GCT in several respects. None of the reported variants have exhibited malignant behavior. Clinically, there is expansile,

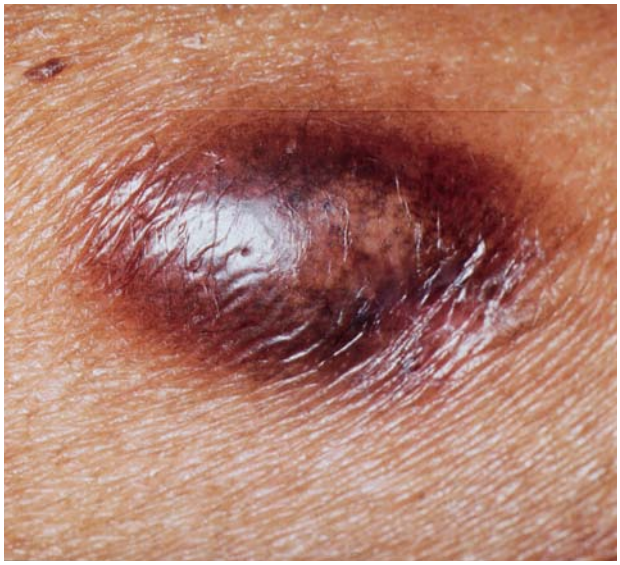

Figure 1. Granular cell tumor on the right superior flank.

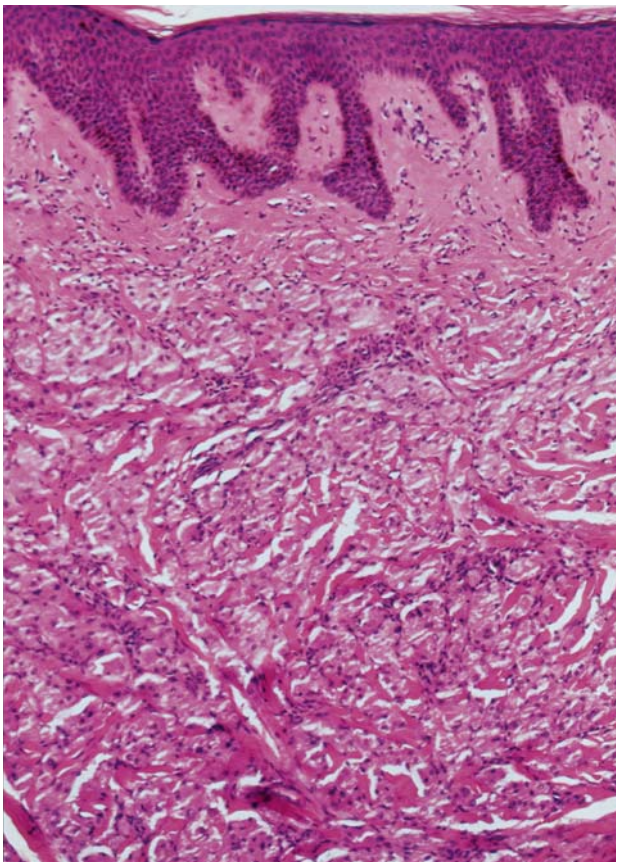

Figure 2. Histopathologic presentation of granular cell tumor showing a nonencapsulated collection of irregularly arranged sheets and nests of large polyhedral cells with pale granular eosinophilic cytoplasm and giant lysosomal granules (H&E, original magnification ×10).

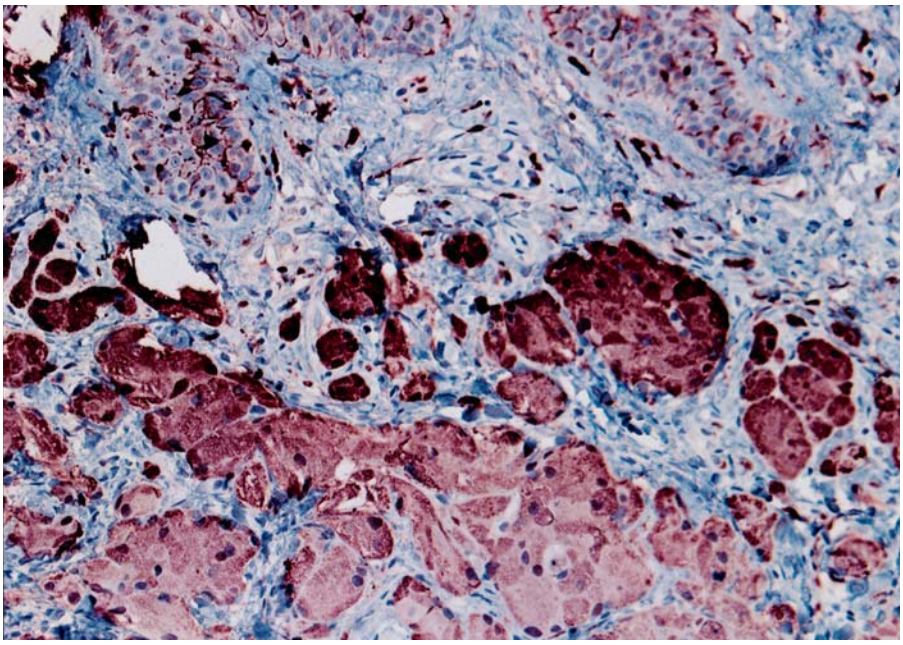

Figure 3. Positive stain of granular cell tumor with S100 immunostain (original magnification ×20).

polypoid growth centered in the papillary dermis, whereas most traditional GCTs are centered deeper in the reticular dermis. Histopathologically, polypoid GCTs demonstrate epithelial collarettes, sharp circumscription, and compressed collagen at the periphery. Furthermore, primitive polypoid GCTs have numerous cells undergoing mitosis and nuclear pleomorphism, which is uncommon in traditional GCTs. Immunopathologically, primitive polypoid GCTs do not stain with S100.[10]

Treatment of GCT is complete tumor removal usually by wide local excision. If the tumor is not completely excised, recurrence is common. Reports of tumor recurrence rates range from 15% to 50%.[1,3,7] Mohs micrographic surgery may be beneficial in ensuring total removal, therefore preventing recurrence.[9,11] Additionally, using Mohs micrographic surgery for this predominantly benign tumor will spare the loss of normal tissue inevitably removed with wide local excision. Coupling Mohs micrographic surgery with S100 immunostaining may further ensure clear surgical margins, especially in cases of perineural extension.[9]

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