

What Is Your Diagnosis?



A 70-year-old woman presented to our dermatology clinic with an enlarging lesion on the left anterior aspect of the scalp of 4 years' duration. She had a history of breast carcinoma in the left breast with positive lymph nodes 2 years prior. Physical examination revealed a 2.5-cm pink, pearly, exophytic plaque on the left anterior aspect of the scalp. The lesion was removed with clear margins by excisional surgery.

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The authors report no conflict of interest.

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The Diagnosis: Clear Cell Hidradenoma

Clear cell hidradenoma (CCH) is a variant of nodular hidradenoma that may contain varying quantities of solid and cystic components and comprises approximately one-third of hidradenomas.¹ Clear cell hidradenomas are slow-growing and fairly uncommon adnexal neoplasms derived from either eccrine sweat glands or apocrine glands. Some researchers have regarded hidradenomas as apocrine tumors due to evidence of apocrine decapitation secretion, whereas others note the lack of apocrine and ultrastructural features of immature eccrine glands.² Clear cell hidradenomas typically develop between the fourth and eighth decades of life, usually peaking during the sixth decade.³ Clear cell hidradenomas usually range in size from 5 to 30 mm and frequently present on the scalp, head, chest, and abdomen; rarely, CCHs present on the joint spaces of the shoulders and knees.³⁻⁵ This neoplasm is more common in women than men³ and generally has a flesh-colored, erythematous, red-brown or blue appearance with a tendency to ulcerate and exude a serous discharge (Figure 1).⁵ The clinical differential diagnosis includes metastatic cancer (eg, renal cell carcinoma, keratoacanthoma, trichoblastoma, trichilemmoma) or other benign adnexal neoplasms.

Histopathologic examination of a CCH generally reveals an unencapsulated and circumscribed neoplasm in the mid or upper dermis with occasional extensions into the subcutaneous fat (Figure 2). The tumor typically presents with 2 types of cells: (1) round, fusiform, or polygonal cells with vesicular nuclei and eosinophilic cytoplasm, and (2) cells with clear cytoplasm and basophilic, often eccentrically located nuclei.⁶ Ducts are scattered within the neoplasm and are lined by a layer of cuboidal cells that can be highlighted on carcinoembryonic antigen and epithelial membrane antigen immunostaining.⁶ The tumor cells themselves are highlighted on cytokeratin AE1/AE3 staining.

Malignant transformation rarely is associated with CCH, with *de novo* clear cell hidradenocarcinoma being more common. Only approximately 6.7% of CCHs have been shown to be malignant, and the malignant tumors feature nuclear atypia, abnormal mitotic figures, necrosis, and infiltration.^{1,7} Although CCH is a benign adnexal neoplasm, it has a high recurrence rate



Figure 1. A 2.5-cm pink plaque on the scalp.

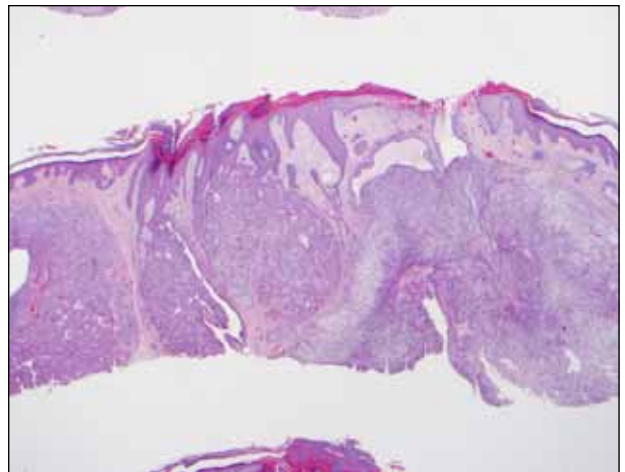


Figure 2. Histopathologic examination revealed an endophytic/exophytic circumscribed neoplasm extending from the epidermis to the mid reticular dermis with several lobules composed of round cells with clear cytoplasm with several scattered ducts (H&E, original magnification $\times 4$).

(approximately 10%) following excision.⁷ The treatment of choice is complete surgical excision, though Mohs micrographic surgery is advocated, as it promotes thorough examination of the tumor margin to ensure complete tumor removal.⁸ Our case illustrates the importance of a broad differential diagnosis when treating patients with CCH as well as keeping in mind nonmalignant lesions are far more common than malignant lesions.

REFERENCES

1. Volmar K, Cummings TJ, Wang WH, et al. Clear cell hidradenoma: a mimic of metastatic clear cell tumors. *Arch Pathol Lab Med.* 2005;129:E113-E116.
2. Goh SG, Carr R, Dayrit JF, et al. Mucinous hidradenoma: a report of three cases. *J Cutan Pathol.* 2007;34:497-502.
3. Gonul M, Cakmak SK, Gul U, et al. A skin tumor in a young girl. diagnosis: clear cell hidradenoma. *Indian J Dermatol Venereol Leprol.* 2010;76:445-446.
4. Singhal V, Sharma SC, Anil J, et al. Giant benign nodular hidradenoma of the shoulder: a rare tumor of orthopedic practice. *Int J Shoulder Surg.* 2010;4:93-96.
5. Yu G, Goodloe S Jr, D'Angelis CA, et al. Giant clear cell hidradenoma of the knee. *J Cutan Pathol.* 2010;37:E37-E41.
6. McKee PH, Calonje E, Granter SR. Tumors of the sweat glands. In: McKee PH, Calonje E, Granter SR. *Pathology of the Skin With Clinical Correlations.* 3rd ed. Philadelphia, PA: Elsevier Mosby; 2005:1632-1635.
7. Ozawa T, Fujiwara M, Nose K, et al. Clear-cell hidradenoma of the forearm in a young boy. *Pediatr Dermatol.* 2005;22:450-452.
8. Yavel R, Hinshaw M, Rao V, et al. Hidradenoma and a hidradenocarcinoma of the scalp managed by Mohs micrographic surgery and a multidisciplinary approach: case reports and review of the literature. *Dermatol Surg.* 2009;35:273-281.