# UC Davis
## Dermatology Online Journal

### Title
Giant pigmented apocrine hidrocystoma of the scalp

### Permalink
https://escholarship.org/uc/item/7rt3s4pp

### Journal
Dermatology Online Journal, 26(8)

### Authors
Nguyen, Harrison P
Barker, Heather S
Bloomquist, Luke
et al.

### Publication Date
2020

### DOI
10.5070/D3268049895

### Copyright Information
Copyright 2020 by the author(s).This work is made available under the terms of a Creative Commons Attribution-NonCommercial-NoDerivatives License, available at https://creativecommons.org/licenses/by-nc-nd/4.0/

Peer reviewed

eScholarship.org Powered by the California Digital Library
University of California

# Giant pigmented apocrine hidrocystoma of the scalp

Harrison P Nguyen[1] MD MBA MPH, Heather S Barker[2] MD, Luke Bloomquist[3] MD, Jarrod P Odom[4] BS, Yve T Huttenbach[2] MD, Ida F Orengo[1] MD

Affiliations: Dr. Nguyen is from the [1]Department of Dermatology, Emory School of Medicine, Atlanta, Georgia, USA, [2]Department of Pathology and Immunology, Baylor College of Medicine, Houston, Texas, USA, [3]Department of Pathology and Immunology, Baylor College of Medicine, Houston, Texas, USA, [4]Baylor College of Medicine, Houston, Texas, USA

*Corresponding Authors: Ida Orengo, MD, 1977 Butler Boulevard., E6.200, Houston, TX 77030, Tel: 713-798-6131, Fax: 713-798-3252, Email: iorengo@bcm.edu; Jarrod P Odom BS, 1 Baylor Plaza, Houston, TX 77030, Tel: 832-496-1001, Fax: 713-798-3252, Email: jarrod.odom@bcm.edu*

## Abstract

Hidrocystomas are benign cysts of sweat duct epithelium that can present as single or multiple lesions, with or without pigmentation. The size is typically 1-3mm in diameter. Although hidrocystomas commonly occur in most parts of the head and neck region, occurrence on the scalp is rare. Herein, we present a 29-year-old woman with a giant pigmented apocrine hidrocystoma of the scalp, which, to our knowledge, represents the largest of its kind reported to date.

*Keywords: hidrocystoma, scalp, surgery*

## Introduction

Hidrocystomas are rare, benign, dermal cysts of apocrine or eccrine gland derivation. They are usually seen in adults 30-70 years of age and can occur as single or multiple lesions [1]. Clinically, hidrocystomas present as firm, translucent, dome-shaped papules or nodules that are most frequently located on the eyelids, especially the inner canthi. Although hidrocystomas demonstrate a predilection for the head and neck region, occurrence on the scalp is rare, with only five other cases reported in the literature [2-6]. They are typically 1-3mm in diameter and are almost always smaller than 10mm [7]. There have only been a handful of reports of apocrine hidrocystomas >10mm in size. To our knowledge, there are only two other cases of apocrine hidrocystomas ≥3cm in size and both occurred on the trunk [7-8]. Herein, we present a young patient with a 3.0cm×3.0cm pigmented apocrine hidrocystoma of the scalp, representing the largest apocrine hidrocystoma on the scalp described to date.

## Case Synopsis

A 29-year-old woman presented for evaluation of a persistent cyst on the right parietal scalp. The lesion had been present for four years, was stable in size, did not bleed or itch, and was tender only with pressure. The patient had no past medical history and denied any family history of skin or soft tissue malignancy. Examination demonstrated a solitary, fluctuant, translucent, skin-colored, subcutaneous 3.0×3.0cm nodule on the right parietal scalp with no overlying surface skin changes; hair directly over the cyst was curly compared to her other hairs (**Figure 1**). A complete surgical excision with in-toto margins to a depth of subcutaneous fat was performed, yielding a clear, fluid-filled, black-colored cyst (**Figure 2**).

Tissue sections showed a multiloculated cyst centered in the dermis. The overlying epidermis was unremarkable. Hematoxylin and eosin stained sections of the tissue revealed the cysts were lined by cuboidal-to-columnar apocrine cells with basally located nuclei, apical eosinophilic granules, and decapitation secretion (**Figure 3**). These findings were consistent with a giant pigmented apocrine hidrocystoma of the scalp.

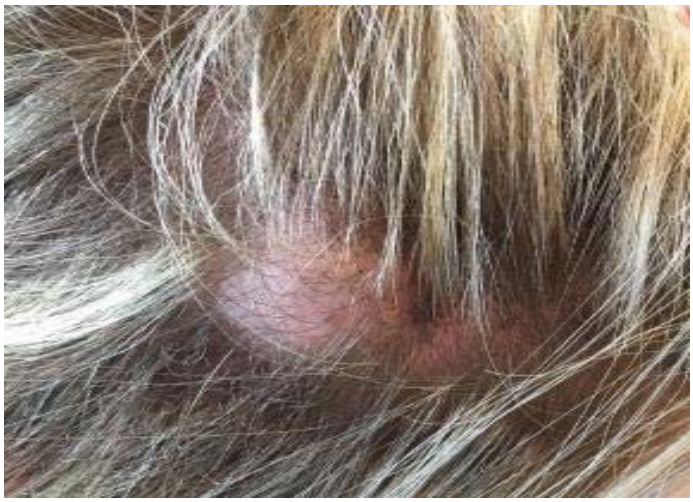

**Figure 1**. *Pre-excisional view of a giant pigmented hidrocystoma presenting as a skin-colored 3.0×3.0cm nodule on the right parietal scalp.*

## Case Discussion

Compared to eccrine hidrocystomas, apocrine hidrocystomas more commonly present as solitary lesions (multiple lesions are associated with Gorlin-Goltz syndrome and Schopf-Schulz-Passarge syndrome), [9], produce oily/foamy secretions, and microscopically demonstrate multiple cystic spaces that may be uni- or multi-loculated with papillary projections and an outer wall of myoepithelial cells [10]. The histologic presence of decapitation secretion is often used to differentiate apocrine hidrocystomas from eccrine hidrocystomas [4], although one study has suggested that the differential expression of keratins and human milk fat globulin 1 on immunohistochemistry is a superior measure for distinguishing the two entities [11].

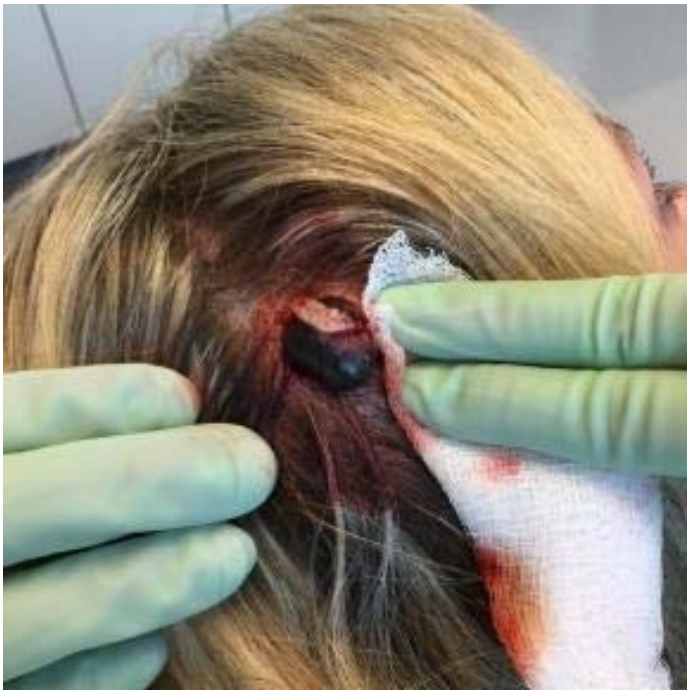

**Figure 2**. *Intra-excisional view of a giant pigmented hidrocystoma presenting as a skin-colored 3.0×3.0cm nodule on the right parietal scalp.*

The coloration of hidrocystomas can vary from skin-color to blue, brown, or black. Pigmented hidrocystomas have been most frequently described on the eyelid; other sites have included the cheek, ear, eyebrow, forearm, nose, periorbital, perioral, temple, and vulvar areas [9]. Pigmentation is observed in 8-50% of cases [12-13], which has long been attributed to the Tyndall effect, or the scattering of shorter wavelengths of light in a colloidal system. However, it has been reported that the amount of lipofuscin deposition may be the difference between pigmented and non-pigmented apocrine hidrocystomas [14]; lesional color tone was found to be dose-dependently determined by the amount of lipofuscin [15]. Lipofuscin is a brown-yellow pigment granule that results from oxidation of cellular contents and accumulates in the skin with increasing age. Some clinically pigmented apocrine hidrocystomas may demonstrate brown apical granules microscopically, which stain negative-to-weakly positive for melanin and negative for hemosiderin, consistent with lipofuscin. Therefore, when pigment granules are present in apocrine hidrocystomas, positivity with periodic acid–Schiff and lack of reactivity with Prussian blue and MART-1 (melanoma antigen recognized by T cells 1) can be helpful diagnostic stains [5]. As part of the work-up, necrotic central involution of a melanocytic lesion must be excluded, so in the absence of these stains, close inspection of the epidermis, dermis, and cyst wall for atypical melanocytes should be performed [16].

The clinical differential diagnosis of a pigmented hidrocystoma should include both non-melanocytic and melanocytic lesions: angioma, basal cell carcinoma, blue nevus, open comedone, eccrine poroma, epidermoid cyst, glomus tumor, hemangioma, lipoma, melanoacanthoma, melanoma, nodular hidroadenoma, nodular Kaposi

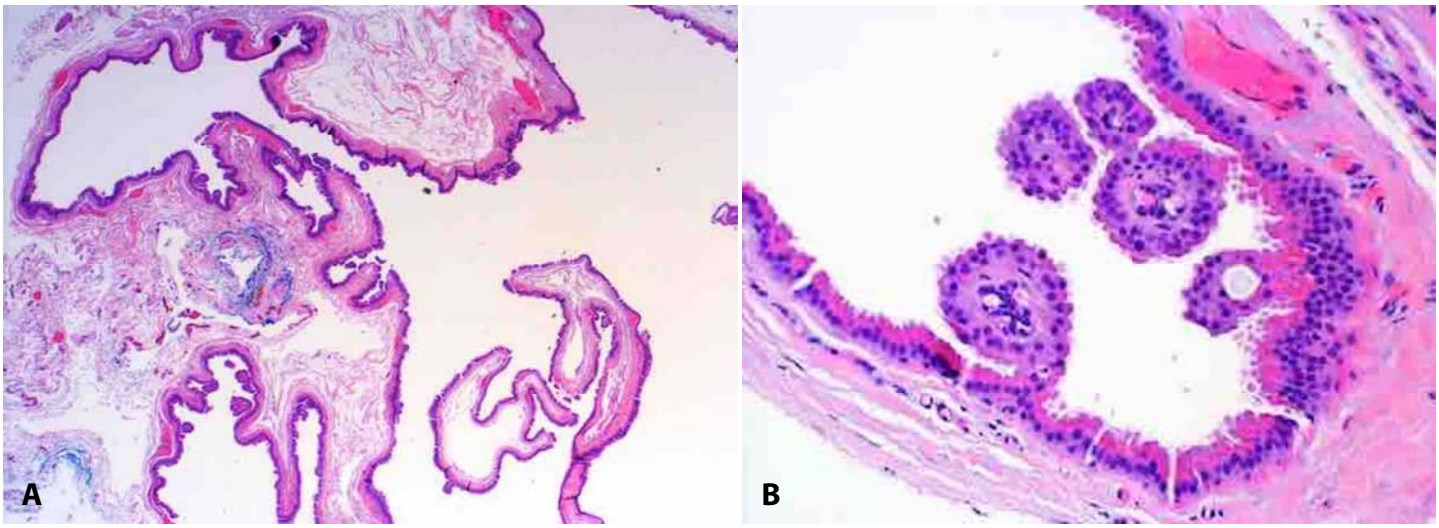


**Figure 3**. ***A)*** *Histopathology showed a multiloculated dermal cyst.* ***B)*** *Histopathology showed the cysts were lined by apocrine cells with decapitation secretion. Focal papillary projections were noted. H&E,* ***A)*** *2×,* ***B)*** *20×.*

sarcoma, pilamatrixoma, seborrheic keratosis, syringoma, tattoo, and venous lake [9]. Hidrocystomas are benign and seldomly recur after removal. As such, surgical excision for both diagnosis and treatment is usually the intervention of choice, especially for solitary lesions. Successful treatment of multiple, smaller lesions has also been reported with carbon dioxide laser ablation, curettage, electrodessication, trichloroacetic acid chemical ablation, botulinum toxin injection, and anticholinergic agents [17-20].

## Conclusion

We present an interesting case of a large pigmented apocrine hidrocystoma on the scalp of a 29-year-old woman. Apocrine hidrocystoma should be considered in the differential diagnosis of large cystic subcutaneous masses of the scalp.

## Potential conflicts of interest

The authors declare no conflicts of interests.

## References

1. Stone MS. Cysts. In: Dermatology. Bolognia J, Jorizzo J, Schaffer J, editors. 3rd ed: Elsevier Limited; 2012. p. 1817-1828.
2. Vittori F, Colomb D. Complex sweat gland tumor of the scalp. Association of a papillous syringocystadenoma and an apocrine hidrocystoma. *Arch Anat Cytol Pathol*. 1976;24:51-5. [PMID: 180909].
3. Matsushita S, Higashi Y, Uchimiya H, et al. Case of giant eccrine hidrocystoma of the scalp. *J Dermatol*. 2007;34:586-7. [PMID: 17683394].
4. El Demellawy D, Babay S, Elkhawaga S, et al. A brief report of a rare case of giant apocrine hidrocystoma presenting as a scalp hematoma. *Pol J Pathol.* 2011;62:116-7. [PMID: 21866470].
5. Oros ML, Elenitsas R, Chu EY. Changing pigmentation in a solitary scalp lesion. *Dermatol Online J.* 2014;20(2). [PMID: 24612584].
6. Tejaswi C, Rangaraj M, Karthikeyan K. Apocrine hidrocystoma arising from nevus sebaceous on the scalp. *Indian Dermatol Online J.* 2016;72:111-113. [PMID: 27057493].
7. May C, Chang O, Compton N. A giant apocrine hidrocystoma of the trunk. *Dermatol Online J.* 2017;23(9). [PMID: 29469730].
8. Holder WR, Smith JD, Mocega EE. Giant apocrine hidrocystoma. *Arch Dermatol.* 1971;104:522-3. [PMID: 5120178].
9. Rappazzo KC, Cohen PR. Pigmented hidrocystoma of nasal epithelium (PHONE): report of a man with a pigmented hidrocystoma of his nose and literature review. *Dermatol Online J.* 2016;22:8. [PMID: 27617522].
10. Vashi N, Mandal R. Giant multi-loculated apocrine hydrocystomas. *Dermatol Online J.* 2010;16:16. [PMID: 21163167].
11. de Viragh PA, Szeimies RM, Eckert F. Apocrine cystadenoma, apocrine hidrocystoma, and eccrine hidrocystoma: three distinct tumors defined by expression of keratins and human milk fat globulin 1. *J Cutan Pathol.* 1997;24:249-55. [PMID: 9138118].
12. Malhotra R, Bhawan J. The nature of pigment in pigmented apocrine hidrocystoma. *J Cutan Pathol*. 1985;12:106-9. [PMID: 9138118].
13. Deprez M, Uffer S. Clinicopathologic features of eyelid skin tumors. *Am J Dermatopathol.* 2009;31:256-262.[PMID: 19384066].
14. Al-Rohil RN, Meyer D, Slodkowska EA, et al. Pigmented eyelid cysts revisited: apocrine retention cyst chromhidrosis. *Am J*

*Dermatopathol*. 2014;36:318-326. [PMID: 24247572].

15. Kitamura S, Yanagi T, Imafuku K, et al. Lipofuscin deposition causes the pigmentation of apocrine hidrocystoma. *J Dermatol*. 2018;45:91-94. [PMID: 28925089].
16. Jakobiec F, Stacy R, Colby K. Pigmented apocrine hidrocystoma of the caruncle. *Cornea*. 2010;29:1320-1322. [PMID: 20697277].
17. del Pozo J, Garcia-Silva J, Pena-Penabad C, Fonseca E. Multiple apocrine hidrocystomas: treatment with carbon dioxide laser vaporization. *J Dermatolog Treat*. 2001;12:97-100. [PMID: 12243666].
18. Dailey RA, Saulny SM, Tower RN. Treatment of multiple apocrine hidrocystomas with trichloroacetic acid. *Ophthal Plast Reconstr Surg*. 2005;21:148-150. [PMID: 15778671].
19. Woolery-Lloyd H, Rajpara V, Nijhawan RI. Treatment for multiple periorbital eccrine hidrocystomas: botulinum toxin A. *J Drugs Dermatol*. 2009;8:71-73. [PMID: 19180900].
20. Shimokawa M, Matsushita S, Kanekura T. Successful treatment of multiple eccrine hidrocystoma with topical atropine sulfate ointment. *J Dermatol*. 2009;36:114-5. [PMID: 19284459].