

Collision Course of a Basal Cell Carcinoma and Apocrine Hidrocystoma on the Scalp

Kristyna L. Iyer, MD; Brandon P. Goodwin, MD; Brent C. Kelly, MD; Richard F. Wagner Jr, MD

PRACTICE POINTS

- When collision tumors are encountered during Mohs micrographic surgery, review of the initial diagnostic material is recommended.
- Permanent processing of Mohs excisions may be helpful in determining the diagnosis of the occult second tumor diagnosis.

To the Editor:

A collision tumor is the coexistence of 2 discrete tumors in the same neoplasm, possibly comprising a malignant tumor and a benign tumor, and thereby complicating appropriate diagnosis and treatment. We present a case of a basal cell carcinoma (BCC) of the scalp that was later found to be in collision with an apocrine hidrocystoma that might have arisen from a nevus sebaceus. Although rare, BCC can coexist with apocrine hidrocystoma. Jayaprakasam and Rene¹ reported a case of a collision tumor containing BCC and hidrocystoma on the eyelid.¹ We present a case of a BCC on the scalp that was later found to be in collision with an apocrine hidrocystoma that possibly arose from a nevus sebaceus.

A 92-year-old Black woman with a biopsy-confirmed primary BCC of the left parietal scalp presented for Mohs micrographic surgery. The pathology report from an outside facility was reviewed. The initial diagnosis had been made with 2 punch biopsies from separate areas of the large nodule—one consistent with nodular and pigmented BCC (Figure 1), and the other revealed nodular

ulcerated BCC. Physical examination prior to Mohs surgery revealed a mobile, flesh-colored, 6.2×6.0-cm nodule with minimal overlying hair on the left parietal scalp (Figure 2). During stage-I processing by the histopathology laboratory, large cystic structures were encountered; en face frozen sections showed a cystic tumor. Excised tissue was submitted for permanent processing to aid in diagnosis; the initial diagnostic biopsy slides were requested from the outside facility for review.

The initial diagnostic biopsy slides were reviewed and found to be consistent with nodular and pigmented BCC, as previously reported. Findings from hematoxylin

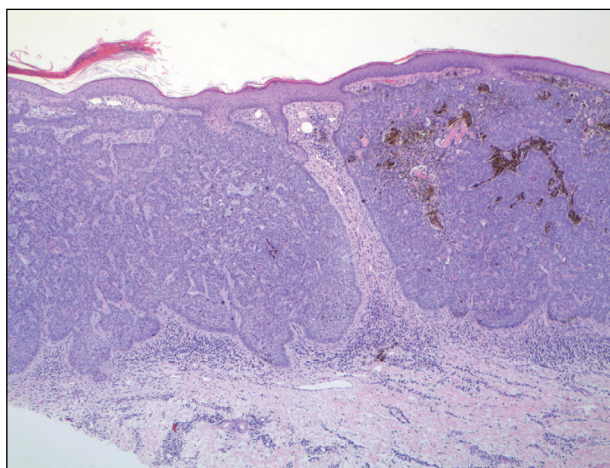


FIGURE 1. A nodular and pigmented basal cell carcinoma in a 92-year-old Black woman (H&E, original magnification ×40).

From the Department of Dermatology, University of Texas Medical Branch, Galveston.

The authors report no conflict of interest.

This case was presented at the American Society for Dermatologic Surgery Annual Meeting; October 24-27, 2019; Chicago, Illinois.

Correspondence: Kristyna L. Iyer, MD (kiyer@usdermpartners.com).

doi:10.12788/cutis.0753



FIGURE 2. A 6.2×6.0-cm flesh-colored nodule on the scalp was examined prior to Mohs micrographic surgery.

and eosin staining of tissue obtained from Mohs sections were consistent with a combined neoplasm comprising BCC (Figure 3A) and apocrine hidrocystoma (Figure 3B). In addition, one section was characterized by acanthosis, papillomatosis, and sebaceous glands—similar to findings that are seen in a nevus sebaceus (Figure 3C).

The BCC was cleared after stage I; the final wound size was 7×6.6 cm. Although benign apocrine hidrocystoma was still evident at the margin, further excision was not performed at the request of the patient and her family. Partial primary wound closure was performed with pulley sutures. A xenograft was placed over the unclosed central portion. The wound was permitted to heal by second intention.

The clinical differential diagnosis of a scalp nodule includes a pilar cyst, BCC, squamous cell carcinoma, melanoma, cutaneous metastasis, adnexal tumor, atypical fibroxanthoma, and collision tumor. A collision tumor—the association of 2 or more benign or malignant neoplasms—represents a well-known pitfall in making a correct clinical and pathologic diagnosis.² Many theories have been proposed to explain the pathophysiology of collision tumors. Some authors have speculated that they arise from involvement of related cell types.¹ Other theories include induction by cytokines and growth factors secreted from one tumor that provides an ideal environment for proliferation of other cell types, a field cancerization effect of sun-damaged skin, or a coincidence.²

In our case, it is possible that the 2 tumors arose from a nevus sebaceus. One retrospective study of 706 cases of nevus sebaceus (707 specimens) found that 22.5% of cases developed secondary proliferation; of those cases,

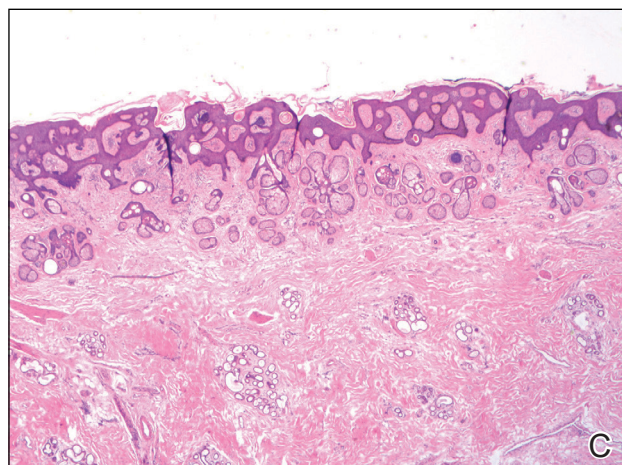
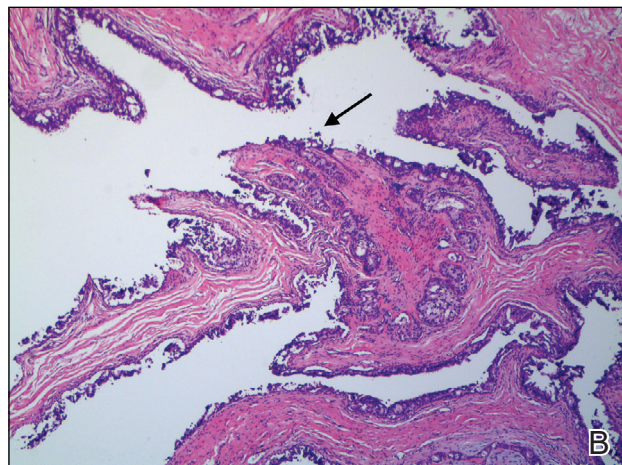
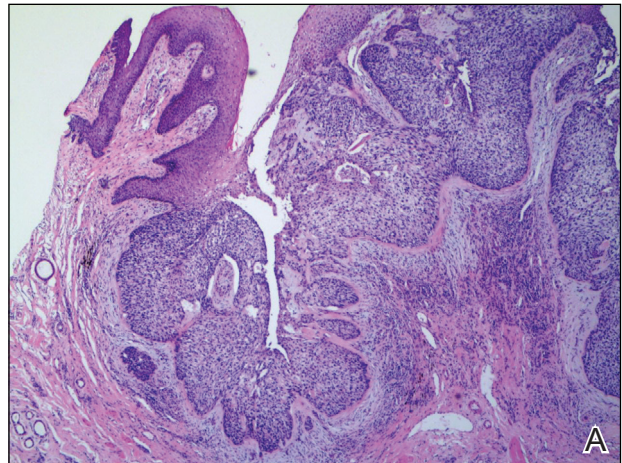


FIGURE 3. A, Histopathology of Mohs section revealed nests of palisading blue cells with fibrous stroma in the dermis, consistent with a basal cell carcinoma (H&E, original magnification ×200). B, A cystic space lined by a double layer of epithelial cells with secretion through decapitation (arrow) and numerous papillary projections into the central cavity was consistent with an apocrine hidrocystoma (H&E, original magnification ×200). C, Acanthosis, papillomatosis, and sebaceous glands were identified in another Mohs section—similar to findings in a nevus sebaceus (H&E, original magnification ×40).

18.9% were benign.³ Additionally, in 4.2% of cases of nevus sebaceus, proliferation of 2 or more tumors developed. The most common malignant neoplasm to develop from nevus sebaceus was BCC, followed by squamous cell carcinoma and sebaceous carcinoma. The most common benign neoplasm to develop from nevus sebaceus was trichoblastoma, followed by syringocystadenoma papilliferum.³

Our case highlights the possibility of a sampling error when performing a biopsy of any large neoplasm. Additionally, Mohs surgeons should maintain high clinical suspicion for collision tumors when encountering a large tumor with pathology inconsistent with the original biopsy. Apocrine hidrocystoma should be considered in the differential diagnosis of a large cystic mass of the scalp. Also, it is important to recognize that malignant lesions, such as BCC, can coexist with another benign tumor. Basal cell carcinoma is rare in Black patients, supporting our belief that our patient's tumors arose from a nevus sebaceus.

It also is important for Mohs surgeons to consider any potential discrepancy between the initial pathology report and Mohs intraoperative pathology that can impact diagnosis, the aggressiveness of the tumors identified, and how such aggressiveness may affect management options.^{4,5} Some dermatology practices request biopsy slides from patients who are referred for Mohs micrographic surgery for internal review by a dermatopathologist before surgery is performed; however, this protocol

requires additional time and adds costs for the overall health care system.⁴ One study found that internal review of outside biopsy slides resulted in a change in diagnosis in 2.2% of patients (N=3345)—affecting management in 61% of cases in which the diagnosis was changed.⁴ Another study (N=163) found that the reported aggressiveness of 50.5% of nonmelanoma cases in an initial biopsy report was changed during Mohs micrographic surgery.⁵ Mohs surgeons should be aware that discrepancies can occur, and if a discrepancy is discovered, the procedure may be paused until the initial biopsy slide is reviewed and further information is collected.

REFERENCES

1. Jayaprakasam A, Rene C. A benign or malignant eyelid lump—can you tell? an unusual collision tumour highlighting the difficulty differentiating a hidrocystoma from a basal cell carcinoma. *BMJ Case Reports*. 2012;2012:bcr1220115307. doi:10.1136/bcr.12.2011.5307
2. Miteva M, Herschthal D, Ricotti C, et al. A rare case of a cutaneous squamomelanocytic tumor: revisiting the histogenesis of combined neoplasms. *Am J Dermatopathol*. 2009;31:599-603. doi:10.1097/DAD.0b013e3181a88116
3. Idriss MH, Elston DM. Secondary neoplasms associated with nevus sebaceus of Jadassohn: a study of 707 cases. *J Am Acad Dermatol*. 2014;70:332-337. doi:10.1016/j.jaad.2013.10.004
4. Butler ST, Youker SR, Mandrell J, et al. The importance of reviewing pathology specimens before Mohs surgery. *Dermatol Surg*. 2009;35:407-412. doi:10.1111/j.1524-4725.2008.01056.x
5. Stiegel E, Lam C, Schowalter M, et al. Correlation between original biopsy pathology and Mohs intraoperative pathology. *Dermatol Surg*. 2018;44:193-197. doi:10.1097/DSS.0000000000001276