Mohs Micrographic Surgery as a Digit-Sparing Treatment for Aggressive Digital Papillary Adenocarcinoma

Aggressive digital papillary adenocarcinoma (ADPAca) is a rare and histologically challenging malignant eccrine neoplasm with a high propensity for local recurrence and metastasis. Classically, the lesion presents as a nonpainful, firm, tan-gray to white–pink, rubbery nodule on the volar surface of the upper digits.[1–3] Treatment of ADPAca has thus far been primarily limited to wide excision with or without digital amputation and subsequent close, long-term follow-up for recurrence and metastatic disease.[2,3] While effective in providing local control, amputation may leave the patient with disfigurement and disability. A case of ADPAca treated with Mohs micrographic surgery (MMS) as a digit-sparing alternative to amputation with no evidence of recurrence or metastasis 2 years postoperatively was presented here.

A healthy 62-year-old woman presented with a small, pink papule on her left fourth finger, which had developed two over 2 years with significant growth in the 2 months prior to presentation. A punch biopsy revealed a deep dermal collection of dilated glandular structures, lined by bland cuboidal to columnar epithelial cells with a few micropapillations. The small, monotonous epithelial cells contained amorphous, light, pink-staining material. Some areas had an obvious myoepithelial layer. Two separate dermatopathologic evaluations rendered a diagnosis consistent with ADPAca (Figure 1). After consultation with the surgical oncology team for discussion of amputation and sentinel lymph node biopsy and dermatologic surgery, the patient opted for MMS over wide-margin excision or digital amputation.

Two stages of MMS were performed to remove the tumor. Histologic findings during the first stage were similar to the original punch biopsy. The postoperative wound measured 1.2 × 1.0 cm (Figure 2), and a Burow's full-thickness skin graft was performed to repair the defect (Figure 3).

Computed tomography scans of the chest, abdomen, and pelvis were negative for metastatic disease. Postoperative, quarterly, clinical examinations and a biannual focused ultrasound of the left axilla have been negative for local recurrence or evidence of lymphadenopathy. The range of motion of the finger, the grip strength, and cutaneous sensation are normal

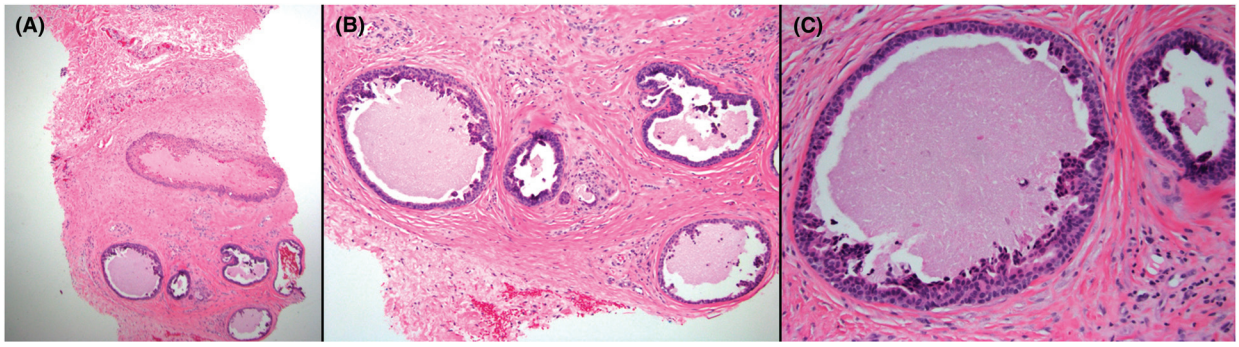

Figure 1. Hematoxylin and eosin–stained histopathology of aggressive digital papillary carcinoma. ×40 magnification (A), ×100 magnification (B), and ×200 magnification (C).

ISSN: 1076-0512 • Dermatol Surg 2017;43:1487–1516 •

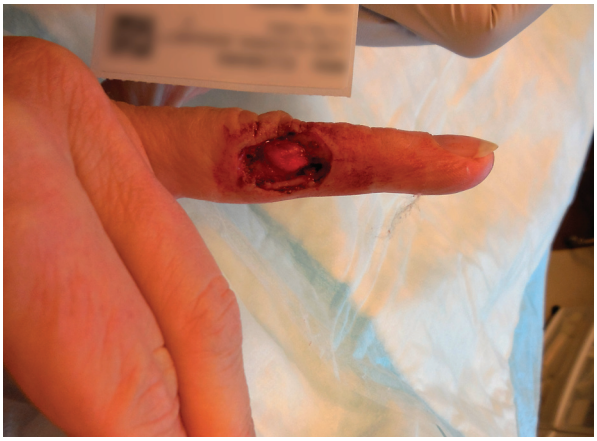

Figure 2. Defect after 2 stages of Mohs micrographic surgery on the left fourth digit.

at 2 years (Figure 4). Consistent with the patient's wishes, the multidisciplinary skin cancer team is refraining from amputation or a sentinel lymph node biopsy unless there is local recurrence.

Discussion

The standard of care for treatment of ADPAca has historically been radical excision, often with digit amputation.[1–3] This recommendation for aggressive treatment stems from the metastatic and recurrent nature inherent to this disease. Such thinking, in turn, is based on a "Halstedian" concept of cancer as a disease that progresses first to nodes and then to distant sites. Experience with breast cancer and other malignancies has identified a "non-Halsteadian" progression, wherein prognosis is determined more by the basic biology of a tumor rather than the extent of surgical resection.[4] Indeed, clinical experience for ADPAca has shown that even with current aggressive treatment standards, the rates of recurrence, and metastasis are as high as 47% and 42%, respectively.[2]

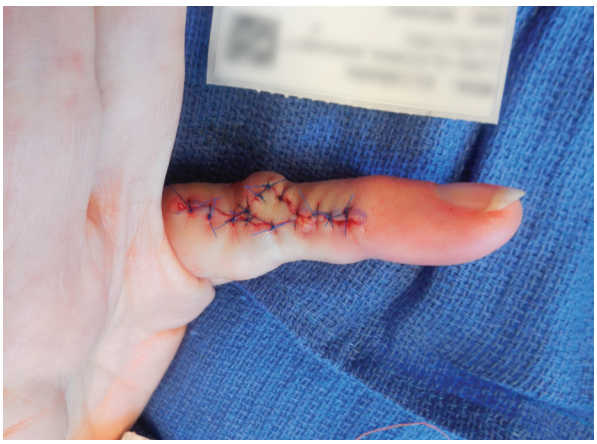

Figure 3. Defect repaired with a Burow's full-thickness skin graft.

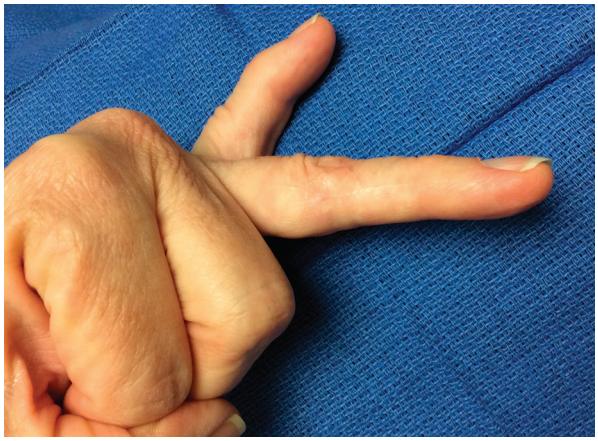

Figure 4. Two years postoperative.

Mohs micrographic surgery, a less aggressive treatment, has significant utility in the treatment of uncommon, malignant, cutaneous, neoplasm lesions, due to its thorough evaluation of tissue margins. Unfortunately, a few reports exist on the use of MMS for malignant eccrine neoplasms. Only a single case report on the use of MMS in ADPAca was reported, which also reported satisfactory results.[1] Another report of 19 cases describing MMS for malignant eccrine neoplasms, excluding microcystic adnexal carcinomas, found no recurrences over an average follow-up period of 29 months. There was a 10% to 70% local recurrence rate following conventional surgical excision.[5] The results of the present case and this limited published experience provide support for the use of MMS in the treatment of ADPAca.

Conclusion

A case of ADPAca treated with MMS as a digit-sparing alternative to amputation was presented, with satisfactory results and no relapse at 2 years. The limitations of this report are the lack of long-term surveillance for recurrence. The present case and the limited published experience provide support that MMS should be considered in the treatment of

ADPAca, particularly when patients present with a small tumor that does not extend to deeper anatomic structures of the digit.

References

1. Jefferson J, Thompson C, Rich P. A slowly enlarging mass on the finger. Dermatol Online J 2014;20. Available from: http://escholarship.org/uc/item/212957kk. Accessed March 22, 2016.
2. Kao GF, Helwig EB, Graham JH. Aggressive digital papillary adenoma and adenocarcinoma. A clinicopathological study of 57 patients with histochemical, immunopathological, and ultrastructural observations. J Cutan Pathol 1987;14:129–46.
3. Frey J, Shimek C, Woodmansee C, Myers E, et al. Aggressive digital papillary adenocarcinoma: a report of two diseases and review of the literature. J Am Acad Dermatol 2009;60:331–9.
4. Fisher B. From halsted to prevention and beyond: advances in the management of breast cancer during the twentieth century. Eur J Cancer 1999; 35:1963–73.
5. Wildemore J, Lee J, Humphreys T. Mohs surgery for malignant eccrine neoplasms. Dermatol Surg 2004;30:1574–9.

Dylan Haynes, BS
Curtis Thompson, MD
Justin Leitenberger, MD
Department of Dermatology
Oregon Health and Science University, OHSU Center for Health and Healing
Portland, Oregon

John Vetto, MD
Department of Surgery
Oregon Health and Science University, OHSU Center for Health and Healing
Portland, Oregon

The authors have indicated no significant interest with commercial supporters.

Superficial CD34-Positive Fibroblastic Tumor Treated With Mohs Micrographic Surgery

Superficial CD34-positive fibroblastic tumor (SCPFT) is a recently characterized mesenchymal neoplasm of the suprafascial tissues.[1] Limited data (21 reported cases) suggest that SCPFT is a contiguous-growth tumor that is infiltrative but circumscribed with a low risk of metastasis.[1–3] This tumor is characterized histologically by cellular fascicles and sheets of spindled to epithelioid cells. Nuclear pleomorphism is prominent, but mitotic activity is minimal. CD34 is diffusely and strongly positive. All previously reported cases of SCPFT were treated with excision. In this report, the authors describe a new case of SCPFT with margin control achieved using Mohs micrographic surgery (MMS).

A 55-year-old Hispanic woman with a slowly enlarging mass on the ventral antebrachium underwent excision for presumed cyst by her primary care provider. This was diagnosed histologically as SCPFT with involved margins and was referred for MMS to achieve tissue sparing and margin control. The original biopsy showed intersecting fascicles of spindled cells and disorganized, hypercellular regions of epithelioid cells (Figure 1). Pleomorphism was marked with few mitoses. CD34 was diffusely positive. Focal or limited positivity was seen for pancytokeratin, desmin, CD10, and CD68. Numerous additional markers including SOX10, S100, and CD31 were negative. Sparse Ki67 staining confirmed a low proliferative index. MMS was performed with clear margins achieved on the second stage. The tumor extended to fascia without muscle invasion. Frozen

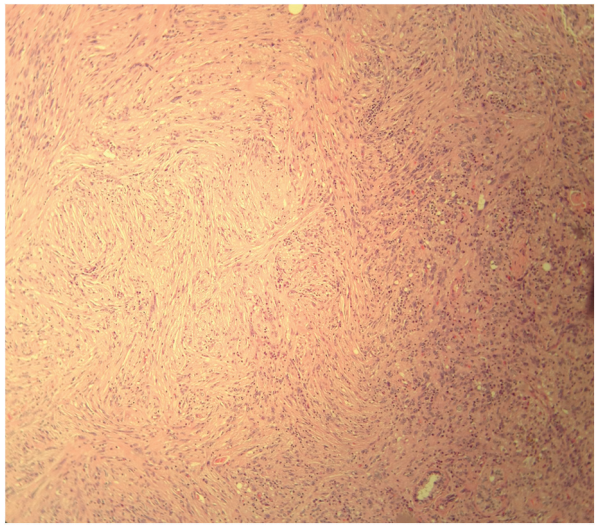

Figure 1. Superficial CD34-positive fibroblastic tumor formalin histology, ×100. Original biopsy showing spindled fascicles evolving into epithelioid, pleomorphic sheets.