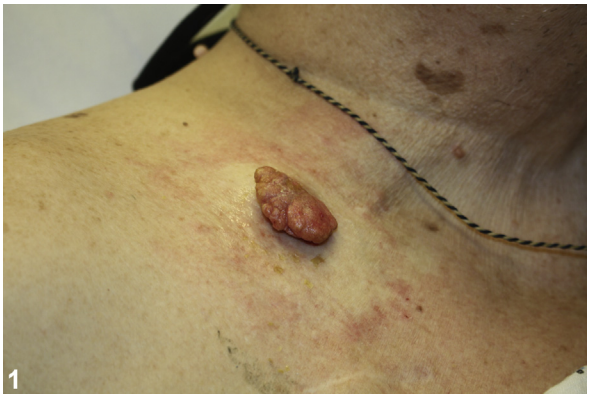
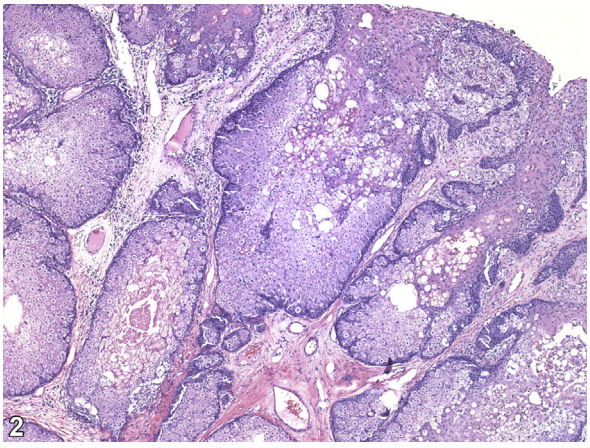
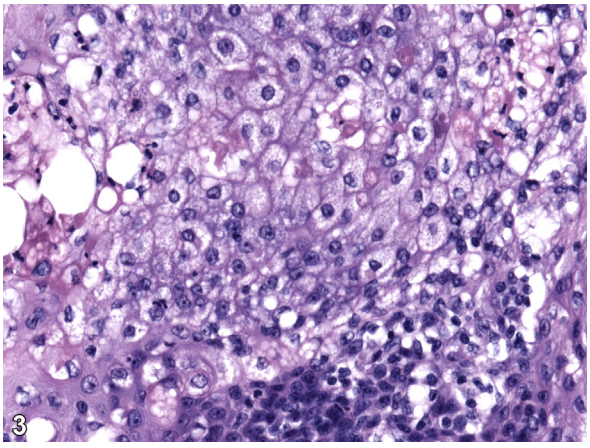
A rapidly growing, exophytic nodule on the chest

Julie Y. Ramseier, BS,[a] Shawn E. Cowper, MD,[a,b] Jonathan S. Leventhal, MD,[a] and Matthew D. Vesely, MD, PhD[a]
New Haven, Connecticut







CASE PRESENTATION

A 76-year-old man with history of follicular lymphoma treated with rituximab and non–small cell lung cancer treated with left-sided upper lobectomy and adjuvant chemotherapy with cisplatin and etoposide presented with a 4-month history of a rapidly growing lesion on the upper right side of the chest. Physical examination revealed a pedunculated, lobulated, exophytic nodule (Fig 1). The lesion was removed by tangential shave biopsy for histologic examination (Figs 2 and 3).

From the Departments of Dermatology[a] and Pathology,[b] Yale University School of Medicine, New Haven.

Funding sources: Supported by a Dermatology Foundation Career Development Award, the Melanoma Research Alliance, and the National Center for Advancing Translational Sciences (KL2 TR001862 to Dr Vesely).

Conflicts of interest: Dr Vesely's spouse is an employee of Regeneron Pharmaceuticals. Drs Cowper and Leventhal and Ms Ramseier have no conflicts of interest to declare.

Correspondence to: Matthew D. Vesely, MD, PhD, Department of Dermatology, Yale University School of Medicine, PO Box 208059, New Haven, CT 06520. E-mail: matthew.vesely@yale.edu.

JAAD Case Reports 2020;6:417-9.
2352-5126/$36.00

https://doi.org/10.1016/j.jdcr.2020.02.038

Question 1: What is the most likely diagnosis?

A. Cutaneous metastasis of lung cancer

B. Verrucous carcinoma

C. Sebaceous carcinoma

D. Cutaneous blastomycosis

E. Xanthogranuloma

Answers:

A. Cutaneous metastasis of lung cancer—Incorrect. Although cutaneous metastasis of non−small cell lung cancer does occasionally occur, histopathology would show adenocarcinoma in the dermis, typically without direct connection to the epidermis.

B. Verrucous carcinoma—Incorrect. Verrucous carcinoma is a rare, slow-growing, locally aggressive variant of cutaneous squamous cell carcinoma that presents as an exophytic mass. Histopathology shows hyperkeratosis, acanthosis, papillomatosis, and hypergranulosis, which were not observed.

C. Sebaceous carcinoma—Correct. Sebaceous carcinoma is a rare neoplasm of the sebaceous glands that has the potential for both regional and distant metastasis. Although our patient had an atypical clinical presentation on the chest, the characteristic histopathologic features were present, including basaloid cells containing variable numbers of cytoplasmic vacuoles that typically encroach on the nuclear contour.[1,2] More typically, sebaceous carcinoma presents on the head and neck as an erythematous or yellowish nodule or plaque that may contain ulceration or crust.[1,3]

D. Cutaneous blastomycosis—Incorrect. Cutaneous blastomycosis has many different clinical presentations, including verrucous plaques with pustules. Histology shows the broad-based budding yeast of *Blastomyces dermatitidis*.

E. Xanthogranuloma—Incorrect. Xanthogranulomas are benign non−Langerhans cell histiocytosis with characteristic Touton giant cells and granulomatous inflammation observed on histology.

Question 2: The lesion was treated with Mohs micrographic surgery without evidence of invasion or metastasis. What is the next best step?

A. Computed tomography of chest, abdomen, and pelvis

B. Colonoscopy

C. Sentinel lymph node biopsy

D. Brain magnetic resonance imaging

E. Immunotherapy

Answers:

A. Computed tomography of chest, abdomen, and pelvis—Incorrect. Although sebaceous carcinoma has been reported to metastasize to the lung, liver, bowel, bone, and brain,[2,4] in this case there was no evidence for invasion.

B. Colonoscopy—Correct. The diagnosis of sebaceous carcinoma should prompt evaluation for Muir-Torre syndrome, which is clinically defined as at least 1 sebaceous gland tumor and a minimum of 1 internal malignancy in a patient.[5] The most common visceral malignancy in Muir-Torre syndrome is colorectal adenocarcinoma, although other neoplasms of the endometrium, ovary, small bowel, pancreas, hepatobiliary tract, and brain are also frequently reported.[5]

C. Sentinel lymph node biopsy—Incorrect. Although regional lymph nodes are the most common site of metastasis for sebaceous carcinoma, this patient did not have any evidence of invasion.

D. Brain magnetic resonance imaging—Incorrect. There was no evidence of invasion after removal by Mohs micrographic surgery. Distant metastases have been reported in the lung, liver, bowel, bone, and brain.[2,4]

E. Immunotherapy—Incorrect. There was no evidence of metastasis. However, metastatic sebaceous carcinoma has been reported to respond to programmed death receptor 1 blockade immunotherapy.[4]

Question 3: Genetic mutations in which gene are the most common cause of Muir-Torre syndrome?

A. *BRAF*

B. *TP53*

C. *PTCH*

D. *MSHI*

E. *BAP1*

Answers:

A. *BRAF*—Incorrect. Mutations in *BRAF* are frequently observed in benign melanocytic nevi as well as malignant melanoma.

B. *TP53*—Incorrect. The most frequently mutated gene in cutaneous squamous cell carcinoma is *p53*.

C. *PTCH*—Incorrect. Inherited mutations in *PTCH* cause Gorlin syndrome, in which numerous basal cell carcinomas develop. Spontaneous basal cell carcinomas also frequently have mutations in *PTCH*.

D. *MSHI*—Correct. Muir-Torre syndrome is attributed to autosomal-dominant germ-line mutations in the DNA mismatch repair genes *MSH1, MSH2, MSH6,* and *PMS2,* leading to genomic instability in microsatellite regions.

E. *BAP1*—Incorrect. Inherited mutations in *BAP1* (BRCA-associated protein-1) cause *BAP1* tumor predisposition syndrome with predisposition to atypical melanocytic lesions and mesothelioma. Uveal melanomas frequently have somatic mutations in *BAP1*.

REFERENCES

1. Iacobelli J, Harvey NT, Wood BA. Sebaceous lesions of the skin. *Pathology*. 2017;49(7):688-697.
2. Kyllo RL, Brady KL, Hurst EA. Sebaceous carcinoma: review of the literature. *Dermatol Surg*. 2015;41(1):1-15.
3. Dasgupta T, Wilson LD, Yu JB. A retrospective review of 1349 cases of sebaceous carcinoma. *Cancer*. 2009;115(1):158-165.
4. Domingo-Musibay E, Murugan P, Giubellino A, et al. Near complete response to pembrolizumab in microsatellite-stable metastatic sebaceous carcinoma. *J Immunother Cancer*. 2018;6(1):1-7.
5. John AM, Schwartz RA. Muir-Torre syndrome (MTS): an update and approach to diagnosis and management. *J Am Acad Dermatol*. 2016;74(3):558-566.