Granulation tissue masquerading as basal cell carcinoma after treatment with vismodegib

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INTRODUCTION

The case of a 65-year-old woman with an advanced, ulcerated biopsy-proven basal cell carcinoma (BCC) located on the left side of her upper back is reviewed. She was treated with vismodegib with only mild clinical improvement. Pathologic analysis of subsequent surgical resection found only granulation tissue with no evidence of residual tumor. It is important for clinicians to be aware that gross disease may not correlate with microscopic disease after treatment with vismodegib.

REPORT OF A CASE

A 65-year-old woman was referred to our clinic in October 2012 for evaluation of a BCC on the left side of her upper back/shoulder (confirmed via biopsy; Fig 1). Her BCC had been neglected and slowly growing over about 10 years. At presentation, a 12- × 15-cm eroded plaque was visible on her left shoulder (Fig 2). Computed tomography imaging of the head, neck, chest, and abdomen was not indicative of metastases.

Because of financial coverage issues, vismodegib was not started initially. Instead, she was treated via debulking (with local anesthetic and #10 scalpel) followed by 5-fluorouracil injections (twice weekly for a total of 7 injections). This treatment resulted in negligible improvement.

In February 2013 she was approved for vismodegib and initially started on 150 mg daily (2 weeks on, 1 week off; subsequently increased to 3 weeks on, 1 week off). Before starting vismodegib, the tumor was painful and friable, resulting in significant bleeding, but over the course of the subsequent months while taking the drug, the pain and bleeding nearly resolved. Interestingly, the lesion only slightly subsided in size despite the patient taking the drug for about 17 months, so the decision was made to have the residual tumor excised by the surgical oncology department (Fig 3).

Abbreviation used:

BCC: Basal cell carcinoma

Resection was performed in January 2015 under general anesthesia with 1-cm circumferential margins down to the underlying muscle, resulting in a wound size approximately 21 cm × 25 cm. After using guiding sutures to reduce the size of the wound, repair was performed using a split-thickness skin graft harvested from the left thigh. The entire specimen was submitted for microscopic examination in the dermatopathology laboratory and surprisingly showed only scar and granulation tissue, with no evidence of tumor (Fig 4). A follow-up photograph from 2 weeks after surgery is shown in Fig 5. At 6-month follow-up her wound had completely healed without evidence of recurrence.

DISCUSSION

Vismodegib is a relatively new drug for the treatment of metastatic BCC or BCC not amenable

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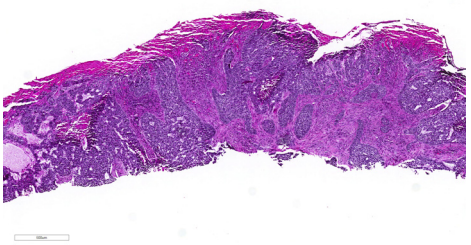

Fig 1. Original biopsy. (Hematoxylin-eosin stain.)

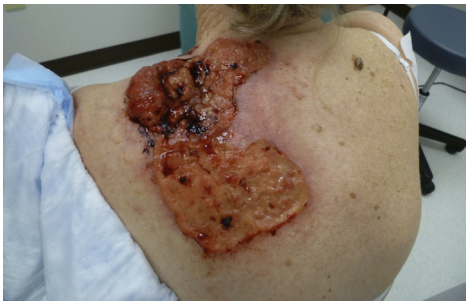

Fig 2. Large, fungating, and ulcerated BCC in October 2012.

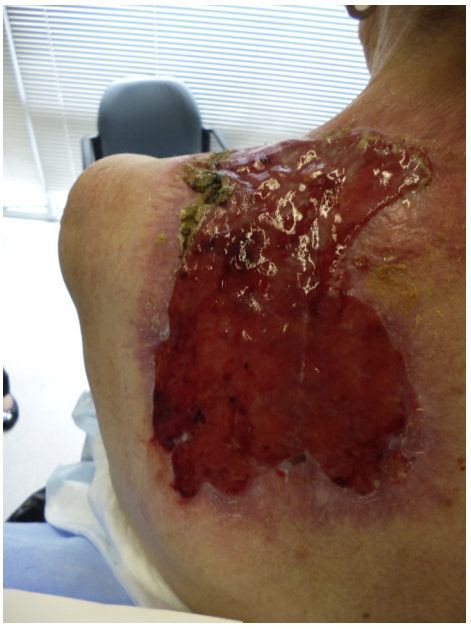

Fig 3. Before excision in July 2014.

to surgical intervention. It targets the Smoothened receptor in the Hedgehog signaling pathway.[1] The efficacy of vismodegib has been described in phase I[2] and phase II trials.[3-5] Side effects are common and have included muscle spasms, alopecia, dysgeusia, decrease in weight, fatigue, nausea, decrease in appetite, and diarrhea.[4,6] The long-term properties of vismodegib continue to be delineated.

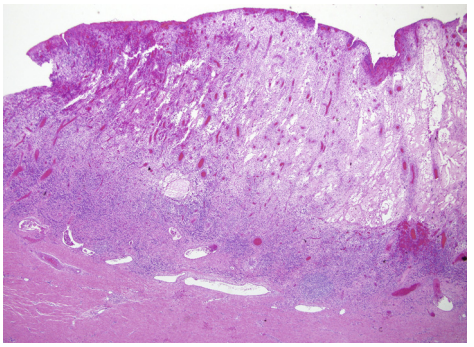

Fig 4. Subsequent submission showed only granulation tissue. (Hematoxylin-eosin stain.) The complete specimen was submitted for microscopic pathologic examination.

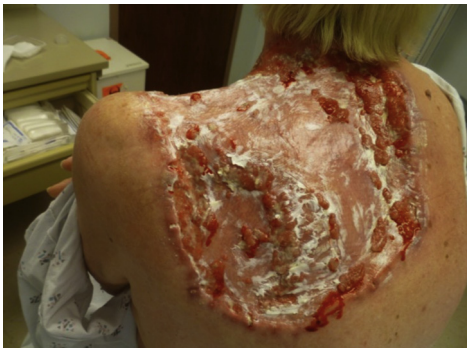

Fig 5. Healing wound, 2 weeks postoperative.

As use increases, it is important to be able to recognize tumor response. In this case, the patient's BCC responded very well, although clinical presentation suggested residual tumor. Only through extensive tissue sampling was the full extent of the tumor's response recognized. We are unaware of previous documentation of similar clinico-pathologic discrepancy.

Our case is one of a dramatic pathologic response in the context of an underwhelming clinical response. It is important for any prescribing provider to be aware of this phenomenon to prevent a premature diagnosis of treatment failure. Based on our experience, we would suggest scouting biopsies or other microscopic assessment before a diagnosis of vismodegib failure is rendered.

REFERENCES

1. Johnson RL, Rothman AL, Xie J, et al. Human homolog of patched, a candidate gene for the basal cell nevus syndrome. *Science*. 1996;272:1668-1671.
2. Von Hoff DD, LoRusso PM, Rudin CM, et al. Inhibition of the hedgehog pathway in advanced basal-cell carcinoma. *N Engl J Med*. 2009;361:1164-1172.
3. Sekulic A, Migden MR, Oro AE, et al. Efficacy and safety of vismodegib in advanced basal-cell carcinoma. *N Engl J Med*. 2012;366:2171-2179.

4. Sekulic A, Migden MR, Lewis K, et al. Pivotal ERIVANCE basal cell carcinoma (BCC) study: 12-month update of efficacy and safety of vismodegib in advanced BCC. *J Am Acad Dermatol*. 2015;72:1021-1026.e8.
5. Dreno B, Basset-Seguin N, Caro I, et al. Clinical benefit assessment of vismodegib therapy in patients with advanced basal cell carcinoma. *Oncologist*. 2014;19:790-796.
6. Chang ALS, Solomon JA, Hainsworth JD, et al. Expanded access study of patients with advanced basal cell carcinoma treated with the Hedgehog pathway inhibitor, vismodegib. *J Am Acad Dermatol*. 2014;70:60-69.