A Prognostic Dilemma of Basal Cell Carcinoma with Intravascular Invasion

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Summary: Basal cell carcinoma is the most common malignancy; however, it very rarely metastasizes. Despite the low mortality caused by this cancer, once it spreads, it has dim prognosis. We report a case of basal cell carcinoma with rare intravascular invasion and review the literature for risk factors and management of metastasis. (Plast Reconstr Surg Glob Open 2016;4:e1046; doi: 10.1097/GOX.0000000000001046; Published online 27 September 2016.)

Basal cell carcinoma (BCC) comprises the majority of nonmelanoma skin cancers and is more common than all other human malignancies, with worldwide incidence increasing.1 Despite the frequency of BCC, rates of metastasis are extremely low, which are reported to be 0.0028% to 0.55%.2

CASE REPORT
An 81-year-old lady was referred to the plastic surgery clinic for management of an enlarging lesion on the right nasal tip, which had been present for approximately 3 months. She had no history of previous skin cancers. A 2-mm punch biopsy of this 8-mm lesion had been reported as an ulcerating aggressive micronodular and sclerosing BCC, adjacent to a small vein but not obviously in a perivenular space. She presented for surgery 8 weeks after initial biopsy. The lesion, with clinically 3-mm marked margins, was excised, and a full-thickness skin graft was used to reconstruct the defect. On pathological examination of the 12- × 13-mm specimen, the tumor widely invaded the reticular dermis and was identified as an invasive sclerosing BCC. Clusters of proliferative lobules of basalioid cells were identified surrounded by D2-40 positive vascular wall stain, indicating intraluminal invasion (Fig. 1). This intravenous tumor extended to surgical margins superiorly and inferiorly. Her health was otherwise in good standing. Because of the aggressive nature of this tumor and local vascular invasion, this lady was referred to radiation oncology for adjuvant radiation treatment (50 Gy in 20 fractions). At 4 months after initial excision, she had no signs of recurrence.

DISCUSSION
There have been only approximately 300 cases of metastatic BCC reported since the 1980s and two previous cases reported of BCCs with intravascular invasion.3,4 One of these cases was a BCC of the posterior helix in a 96-year-old woman, which was excised by Mohs surgery and closed with full-thickness skin graft. Because of her age and comorbidities, she had no adjuvant treatment.4 The other case of a BCC with intravascular invasion was in a 51-year-old man with an infiltrating and micronodular BCC with tumor within venules.5 He underwent further excision, which demonstrated surgical scar, and the patient was elected for physical examination follow-up every 3 months. Unfortunately, both articles did not have a long-term follow-up to comment on recurrence or distant metastasis.

Risk factors for the rare occurrence of metastasis from BCC are head and neck, large or long-standing lesions, significant tumor depth, fair skin, middle age, being male, and immune compromise.2 Most commonly metastasis occurs in regional lymph nodes and then in lungs, bones, and skin. Because of the unusual pattern and rarity of intravascular invasion in BCC, it is unclear in the literature if this poses a risk of recurrence or metastasis. Hence, there are currently no guidelines for the necessity of adjuvant treatment and prognosis.

Intravascular invasion plays a significant role in patient survival in certain cancers, such as breast, gastric, and prostate cancers. In cutaneous carcinomas, such as melanoma and squamous cell carcinoma (SCC), metastasis is postulated to be via lymphatic vessel spread. Furthermore, vascular invasion usually coexists with lymphatic involvement. However, the presence of microscopic lymphovascular invasion in cutaneous carcinomas has not been
proven to increase the risk of metastasis. This raises the question of whether an adjuvant therapy is needed for such patient. Local treatment of BCCs can be surgical or nonsurgical, with the use of radiotherapy, cryotherapy, or topical fluorouracil or imiquimod. Radiotherapy is a useful treatment, particular for elderly patients with extensive tumors for whom surgery may not be appropriate.

Sentinel lymph node biopsy (SLNB) has become a common practice for treating patients with invasive skin cancers such as melanoma. Its use in patients with SCC is under debate, and it is documented in only few cases for BCC. It has been found that because of the relatively low incidence of cervical lymph node metastases in patients with SCC of the head and neck, SLNB for patients with clinically no nodes involved, is not justified. In cases on BCC with lymphatic invasion, the use of SLNB could be considered; however, because of the rarity of this condition, the benefit has not been evaluated.

Once spread, adjuvant treatment of metastatic BCC has been largely unsuccessful with a mean survival of 8 months. Because of the rarity of metastatic BCC, there have been no systematic trials of adjuvant therapies, and there are no clearly established treatment modalities. Additional treatments such as radiation or nontargeted cisplatin chemotherapy should be considered for optimum patient outcomes. Innovative highly targeted therapies, in the form of oral medication (smoothed inhibitors), which inhibit the Hedgehog signaling pathway and lead to shrinkage of advanced BCCs, show promise for the management of metastatic BCC.

CONCLUSIONS

Advanced and metastatic BCCs are often difficult to treat. Although BCCs are often regarded as local malignancies, as our case demonstrates, there is potential for early spread. As the incidence of BCC continues to rise, it is important that these lesions are recognized early, biopsied, and excised to prevent metastatic spread.

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