The Impact of Neoadjuvant Hedgehog Inhibitor Therapy on the Surgical Treatment of Extensive Basal Cell Carcinoma

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Abstract

Background: Although surgical excision is a key treatment modality for basal cell carcinoma (BCC), select patients with extensive BCC are poor candidates for excision due to the significant excision and reconstruction required. HHIT therapy has been utilized in a neoadjuvant setting for these patients to decrease morbidity and increase resectability. In order to more clearly define the utilization of HHIT for these patients, we evaluated the impact of neoadjuvant hedgehog inhibitor therapy (HHIT) on the subsequent surgical resection and reconstruction.

Methods: An IRB-approved, retrospective chart review was performed of patients who received HHIT as initial treatment for extensive BCC. Patients who stopped HHIT and underwent surgical resection were included. Evaluation included: BCC tumor response to HHIT, operative data, pathological data, radiation requirements, and evidence of tumor recurrence.

Results: Six patients were identified with tumors of the face/scalp (n=4), trunk (n=1), and upper extremity (n=1). HHIT was continued until tumors became unresponsive (n=3, mean=71 weeks) or side effects became intolerable (n=3, mean=31.5 weeks). In each case, tumor burden was decreased with HHIT, requiring less extensive resection and reconstruction than planned prior to HHIT. In two cases, segmental mandibulectomy was avoided (one patient shown in Figures 1 and 2), and in one case, clavicle resection was avoided. All resected specimens contained BCC, and 4 specimens exhibited clear margins without postoperative recurrence. Postoperative radiation was performed in cases with positive margins (n=2). One patient experienced considerable local recurrence. Length of follow up was 3.6 to 11.8 months (mean=7.9 months).

Figure 1. Patient with BCC involving left chin, lip, and mandible prior to HHIT.

Figure 2. Same patient seen in Figure 1.This is the site of BCC exhibiting significant regression after HHIT at the time of resection and local flap reconstruction. Segmental mandibulectomy was avoided in this patient.

Conclusions: Although HHIT was not curative in our patient series, HHIT is a viable option for neoadjuvant treatment of extensive BCC that can decrease the morbidity of surgical treatment. For future patients, a combined HHIT and surgical treatment protocol is outlined.

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