Clinical Observation or Further Excision: A Retrospective Review of Margin-positive Squamous and Basal Cell Carcinomas

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Background: Patients determined to have margin-positive nonmelanoma skin cancer (NMSC) after initial shave or punch biopsy performed by a primary care physician or dermatologist are commonly referred to extirpative surgeons for definitive removal. Not infrequently, the residual tumor is not appreciable, and the exact location of the lesion is indiscernible. The consulting surgeon must decide to excise the presumed lesion or clinically monitor for recurrence.

Methods: This single-center, retrospective review examined patients with squamous and basal cell carcinomas referred over a 5-year period to two senior authors.

Results: In total, 233 patients had a total of 312 lesions excised. Thirty-nine (12.5%) of these lesions (in 33 patients) demonstrated no residual tumor on pathologic examination. Twelve patients were managed nonoperatively (5.15%) and observed to have had no tumor recurrence with a mean observation period of 14.66 months (range 1–54 months). Thus, approximately 19.3% of all patients referred had no residual tumor.

Conclusion: Based on our observations and low proclivity for metastases, nonoperative monitoring of NMSC may be a reasonable option for certain lesions less than 1 cm that are undiscernible at the time of referral. (*Plast Reconstr Surg Glob Open 2023; 11:e5473; doi: 10.1097/GOX.0000000000005473; Published online 18 December 2023.*)

INTRODUCTION

In the United States in 2011, the incidence of basal cell carcinoma (BCC) was 2.8 million, and squamous cell carcinoma (SCC) was 1.5 million.[1] There are consensus-based up-to-date practice guidelines to provide evidentiary recommendations for the resection of primary cutaneous BCC and SCC. First-line treatments include conventional surgery (office based or operating room) with safety margins. Patients are usually referred for operative excision and reconstruction after undergoing diagnostic punch or shave biopsies performed by primary care physicians or dermatologists. A conundrum exists when patients are referred to extirpative surgeons after undergoing shave excisions with a pathological report of a positive margin, and yet, residual gross disease is not discernible. Not infrequently, significant time has elapsed between the original biopsy and the consultation, during which time the wound has healed. The lesion's exact location may be unclear despite accompanying diagrams and pictures, and the patient may not be able to exactly indicate the location. This finding may be particularly true for those patients with severe actinic change, scars from previous resections and reconstructions, efforts at freezing disease, or multiple biopsies. Although the consulting surgeon might be able to localize the area to a healed saucer-like scar, it is conceivable that the shave excision itself was curative and no residual disease is present. Thus, the surgeon is faced with the decision of whether to re-excise and reconstruct the resulting defect based on the pathology report, or to simply monitor the patient to detect recurrence.

To help make a recommendation to manage this clinical dilemma, a retrospective review of nonmelanoma skin cancer (NMSC) resection procedures spanning 5 years (2018–2023) was performed in an effort to determine the percentage of patients in whom no disease was detected during surgical excision after referral with a margin-positive pathology report.

Disclosure statements are at the end of this article, following the correspondence information.

MATERIALS AND METHODS

In this institutional review board–approved retrospective review, International Statistical Classification of Diseases and Related Health Problems 10 codes identified 277 records with SCC and BCC, including those of the head and neck, under the care of the senior authors over a four-year study period, from January 2018 to June 2023. Exclusion criteria included referral following Mohs surgery, re-excision at another outside facility, insufficient follow-up (<1 month), and absence of initial biopsy pathology report. Twelve patients were followed up clinically rather than re-excised, and one was re-excised at another facility. The remaining 233 patients were operated on by the senior authors, with a total of 312 lesions excised. These records were examined for presence of residual tumor or lack thereof.

Study data were collected and managed using Research Electronic Data Capture (REDCap).[2,3] Data collected included current age, sex, history of prior skin cancers, name of the referring provider, age at the time of referral, date of biopsy performed by referring provider, number of lesions, diagnosis at time of referral, anatomic site, date of lesion re-excision, approximate tumor size in centimeters during re-excision, intraoperative frozen section pathology report diagnosis (BCC, SCC, actinic keratosis, keratoacanthoma, or no residual tumor), intraoperative frozen section pathology margin clearance, postoperative parafilm pathology report final diagnosis, postoperative parafilm pathology margin clearance, and additional postoperative findings. Frozen sections were performed on all surgical specimens during operation to obtain clear margins. Data were also mined for the 12 patients who were observed clinically for a comparison.

RESULTS

During the 5-year study period, 233 patients were referred with a total of 312 biopsy-proven, margin-positive nonmelanoma skin cancer lesions. Patients with Merkel cell tumors or neuronal involvement were excluded. There were 190 BCCs, 106 SCCs, and 16 SCCs in situ. There were two kerato-acanthomas. The study subjects included 97 female and 136 male patients. Fifty-seven individuals (24.4%) had a documented history of skin cancer. Of all the lesions excised in the operating room, 39 (12.5%) were found to have no residual tumor present within the lesion on both intraoperative and final pathology. Of these referred lesions, 20 had original biopsies indicating SCC; 12, BCC; and seven, SCC in situ (Tables 1 and 2).

The cheek was the most common location for referred lesions of both BCC and SCC. The average lesion size

Takeaways

Question: Should all patients referred with small nonmelanotic skin cancers (NMSC) and no observable residual disease undergo operative removal to clear the tumor

Findings: In total, 233 patients with shave biopsy demonstrating NMSC had 312 lesions excised. Of the lesions excised, 12.5% had no residual disease found at time of excision or on final pathology. Twelve patients with no residual gross disease after shave excision were managed by observation without recurrence over an average of 14.7 months.

Meaning: Small biopsy-proven NMSC without gross residual disease, and with careful patient consent may be carefully monitored for recurrence without undergoing potentially unnecessary surgery.

Table 2. Demographics, Pathology, and Location of Tumors with No Residual Lesion Found on Re-excision

Sex	Age	Pathology	Location
Female	64	SCC in situ	Arm
Female	54	SCC	Nasal side wall
Male	70	BCC	Temporal area
		BCC	Nasal tip
Male	82	SCC	Preauricular
Male	76	BCC	Nasal tip
Male	64	BCC	Preauricular
Male	64	BCC	Temporal area
Male	70	SCC	Scalp
Male	77	BCC	Nose
Male	65	SCC	Scalp
Male	57	BCC	Nose
Female	69	SCC	Chest
Female	76	SCC	Leg
		SCC in situ	Leg
		SCC	Leg
		SCC	Leg
Male	71	SCC	Nasal dorsum
Female	90	SCC	Nose
		BCC	Nose
Female	76	SCC	Leg
		SCC	Leg
Female	72	BCC	Nose
Female	64	SCC in situ	Cheek
Male	53	SCC in situ	Ear
Female	53	BCC	Forehead
Female	86	BCC	Lip
Male	76	SCC in situ	Cheek
Female	62	SCC	Cheek
Male	97	SCC	Cheek
Male	65	SCC	Scalp
Male	71	SCC in situ	Cheek
Male	63	SCC	Scalp
Male	76	SCC	Scalp
Male	71	SCC in situ	cheek
Male	76	SCC	Scalp
Male	68	BCC	Nasal tip
Male	77	SCC	Cheek
Male	76	SCC	Scalp

Table 1. Pathology of Biopsy Specimens with No Tumor Found on Re-excision

Histopathology of Original Pathology (n = 39)	No. Specimens (%)
SCC	20 (51.2)
SCC in situ	7 (17.9)
BCC	12 (30.7)

Table 3. Original Pathology of Patients Followed Up without Recurrence

Pathology	Location	Length of F/u (mo)
BCC	Right cheek	24
BCC	Right cheek	4.5
BCC	Left cheek	19
BCC	Left alar crease nose	10
BCC	Right nasal ala	54
SCC in situ	Nasal tip	1
BCC	Nasal bridge	2
BCC	Nasal bridge	24
SCC in situ	Right cheek	13
BCC	Vertex scalp	10
SCC	Superior helix left ear	3
SCC	Vertex scalp	12

was 1.8 cm (range 0.5–6 cm) for BCC and 2.1 cm (range 0.5–12 cm) for SCC. Lesions with residual tumor had a mean size of 2.1 cm, whereas those negative for tumor on re-excision measured 1.1 cm on average.

The average time from initial biopsy to surgical excision for those with and without residual tumor was 112 days and 160 days (range 35–606 days), respectively.

Twelve of the referred patients (5.15%) had no visual residual tumor during initial consultation (Table 3). With the patients' concurrence, these patients were monitored for residual tumor recurrence. None of the patients had recurrent tumor on an average of 14.7 months follow-up (range 1–54 months). The morphological characteristics of the initial biopsies included eight BCCs, two SCCs in situ, and two SCCs (Table 3). Although three of the patients were lost to follow-up after 1–2 months, to the best of our knowledge with careful review of their medical records to date, there has been no further recurrence in these patients. Combined with the 39 lesions that underwent re-excision but were found to be negative for malignancy, 51 lesions (16.34%) referred for margin-positivity were presumably cleared by the initial shave biopsy.

DISCUSSION

This investigation was initiated as a result of seemingly significant anecdotal rates of no residual tumor denoted on final pathology reports after excision of biopsy-proven, margin-positive NMSC. A careful review of the literature has not revealed the interplay between margin-positive shave biopsy referrals from dermatologists to plastic surgeons who must then decide between clinical observation or secondary excision in those lesions without observable gross residual disease. The overwhelming majority (83.56%) of re-excised NMSCs in our study contained residual tumor. This percentage contrasts excision-positive specimens after biopsy-proven lesions reported in the literature of 27%–60% for SCC and 58%–85% for BCC.[4–7]

In our study, a history of skin cancer was more common in patients found to have no residual tumor during surgery (30.8%) when compared with patients with residual tumors (24.8%). This difference is conceivable, as over half of patients with a personal history of skin cancer will have a second diagnosis within 10 years.[8] With this knowledge, surgeons may be inclined to perform re-excisions in patients with a history of NMSC. Of the 39 surgical specimens noted to not have residual tumor, 30.7% were initially BCC and 51.2% were SCC. The higher rate of tumor negativity in this study may very well reflect on aggressive biopsy techniques and, perhaps, cauterization with concern of residual margin-positivity with poorer degree of differentiation.[9,10] No one biopsy technique has been deemed the gold standard, as no well-powered studies have demonstrated different rates of margin-positive excisions.[11] While this study did not consider biopsy technique in data collection, the dermatologist contributing two-thirds of the referrals consistently used superficial shave biopsy without cauterization. Clearly, a shave excisional biopsy would more likely have the potential to clear a tumor over a punch biopsy. The average time to re-excision did not differ between specimens ultimately found to have residual tumor versus those that did not. This study demonstrated a significantly lower rate of NMSCs found negative on re-excision than rates from other studies. Including those patients who were followed up and did not demonstrate any tumor recurrence, the total negative rate was found to be approximately 16.3% for specimens and 19.3% for patients. The few examples reported in the literature[4–7] have a wide enough range of rates to suggest that proposing guidelines around an acceptable negative re-excision rate may be beneficial. The important decision facing plastic surgeons with biopsy-proven NMSC is whether to re-resect the area and reconstruct the resulting deformity or to treat the area with conservative monitoring. When gross disease is still evident, the decision to completely excise is clear-cut. However, when disease is not clinically apparent, the decision to re-excise a scar or to monitor the patient is less certain. In this study when residual gross disease was not observed, and the area was small (<1 cm), the patient was given the option to go to the operating room and re-excise the area with sedation and frozen sections to guide the extent of re-excision or to simply monitor the area carefully for evidence of disease, and then operate if disease recurred. Additional factors influencing the decision were location of the tumor, tumor differentiation, the belief that delaying of recognition of residual disease would not increase the size or complexity of the reconstruction, and the level of comfort the patient had with a nonoperative approach and careful follow-up. Of note, two studies showed that the presence of residual BCC in re-excised specimens is more probable when lateral margins, rather than deep margins, were positive.[12,13]

Weaknesses of this study include (1) inclusion of only a single center for data collection; (2) the small number of patients who were simply observed versus those who chose surgical excision; (3) that the study was performed in a retrospective manner; and (4) that many of original biopsy specimens did not indicate the level of tumor differentiation, which might have guided more patients into the group that was carefully observed versus those undergoing surgery.

CONCLUSIONS

Based on our finding and the low proclivity for metastatic disease in NMSC, we suggest that careful nonoperative monitoring for referred SCC and BCC for small (<1 cm) lesions when residual gross disease is not discernible (particularly if the original biopsy was of a less aggressive nature, such as a nodular BCC or SCC in situ) may preclude unnecessary excisional surgery and reconstruction. Rechecks at 3-month intervals out to 1 year are suggested for those patients who do not undergo surgical excision.[14,15]

DISCLOSURE

The authors have no financial interest to declare in relation to the content of this article.

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