Risk of No Residual Disease from Head and Neck BCC Excisions following Shave Biopsy

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Background

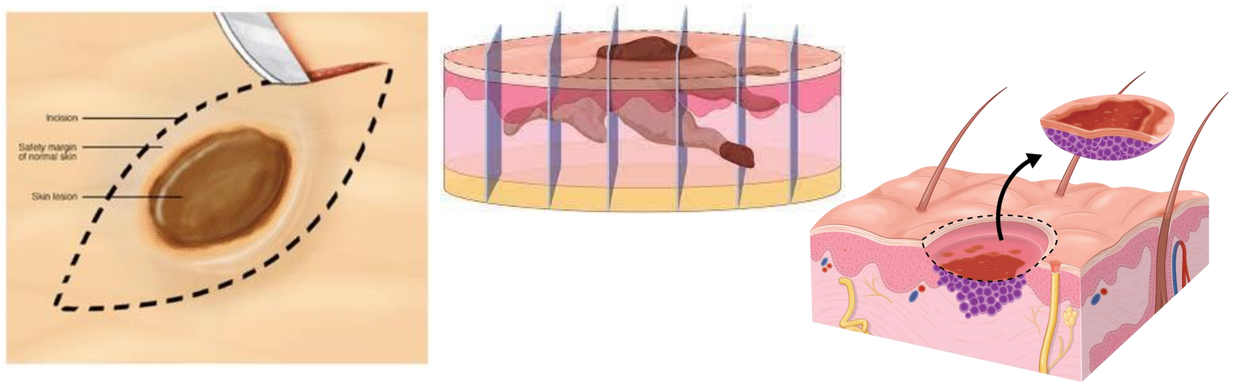
- Basal cell carcinoma (BCC) is the most common cancer in the U.S. (3.6M cases annually).[1]
- Risk factors: Age, fair skin, UV exposure, smoking, genetic syndromes.[1-3]
- Standard treatment: Surgical removal (Mohs or wide local excision [WLE]).[2]
- Mortality remains extremely low; metastatic rate <0.1%.[3]
- Concern: Overtreatment → cosmetic/functional morbidity and high costs ($6.5B annually).[3]
- Prior studies: 15–25% of biopsy-proven BCCs show **no residual tumor** on excision.[4,5]

Objectives

To evaluate the prevalence and predictors of no residual disease on wide local excision specimens in patients with shave biopsy-confirmed head and neck basal cell carcinoma.

Methods

- **Type**: Retrospective cohort study.
- **Setting**: Kaiser Permanente Head and Neck Surgery clinics (Oakland/Richmond, CA).
- **Population**: Adults with shave biopsy-confirmed BCC referred for WLE (Jan 2022–Dec 2023).
- **Exclusions**: Non-BCC diagnoses, Mohs surgery, observation, or palliative care.
- **Primary outcome**: Residual tumor vs. no residual tumor on final pathology.
- **Variables collected**: Demographics, comorbidities, histologic subtype, biopsy-to-surgery interval, Charlson Comorbidity Index (CCI).
- **Statistical analysis**
  - Chi-squared used for bivariate analysis.
  - Multivariable logistic regression analyses, adjusting for independent variables that showed a significant correlation with dependent variables, were run.
  - A *p*-value of less than 0.05 was considered statistically significant.
  - All statistics were conducted with SPSS version 25.0 (IBM, Armonk, NY).



Results

Demographic and Clinical Characteristics According to Residual Disease Status (based on final pathology following wide local excision)

	Total (n = 243)	No Residual Disease (n = 66, 27.2%)	Cancer Found (n = 177, 72.8%)	*p*-value
Demographic Characteristics				
Age at time of WLE in years, mean (SD)	70.67 (13.64)	65.44 (14.16)	72.62 (12.95)	< 0.001
Sex, n (%)				
Female	97 (39.9)	39 (59.1)	58 (32.8)	< 0.001
Male	146 (60.1)	27 (40.9)	119 (67.2)	
Race/Ethnicity, n (%)				
White	226 (93.0)			
Hispanic	8 (3.3)			
Other*	4 (1.6)			
Clinical Characteristics				
Histologic subtype, n (%)				
Superficial	5 (2.1)	0 (0.0)	5 (2.8)	0.556
Nodular	184 (75.7)	53 (80.3)	131 (74.0)	
Micronodular	1 (0.4)	0 (0.0)	1 (0.5)	
Mixed	40 (16.5)	9 (13.6)	31 (17.5)	
Infiltrative	13 (5.3)	4 (6.1)	9 (5.1)	
Charlson Comorbidity Index, mean (SD)	4.51 (2.84)	3.79 (2.94)	4.78 (2.76)	0.015
Diabetes, n (%)	36 (14.8)	10 (15.2)	26 (14.7)	0.928
Radiation History, n (%)	27 (11.1)	7 (10.6)	20 (11.3)	0.878
Transplant History, n (%)	7 (2.9)	2 (3.0)	5 (2.8)	0.932
Time from biopsy to WLE, median (IQR)		46.03 (29.48)	65.86 (129.98)	0.221

Abbreviations: SD, standard deviation; IQR, interquartile range.
*Other includes Asian, Black, and American Indian/Alaska Native

Discussion

- Over one-quarter of patients had **no residual tumor** on WLE.
- **Female sex** and **younger age** independently associated with no residual disease.
- Systemic risk factors (diabetes, transplant history, prior radiation) not significantly associated.
- Findings highlight risk of **overtreatment**, particularly in older/frail patients or lesions in sensitive cosmetic areas.
- Biological/behavioral sex differences may explain lower residual disease in women.[6]
- Results consistent with prior literature (15–25% no residual disease after biopsy).[4,5]
- Supports **individualized risk stratification** and potential role for watchful waiting in select patients.
- Limitations: Retrospective design, single health system, predominantly White cohort, limited lesion-specific data, bread-loafing pathology technique, no recurrence outcomes.

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