

Outcomes of lateral temporal bone resection surgery for primary cutaneous squamous and basal cell carcinoma

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Introduction

Involvement of the temporal bone by carcinomas is rare, with an estimated incidence of 1-6 per 1 million population per year. There is a paucity of evidence relating to the outcomes and survival for patients with cutaneous SCC and BCC involving the temporal bone.

Aims

To evaluate the outcomes for patients after lateral temporal bone resection (LTBR) surgery for cutaneous SCC and BCC in Western Australia, to ascertain predictors of survival, treatment failure and identify patients in whom this surgery can provide best oncologic outcomes.

Methods

Retrospective review of the medical records of all patients who had a LTBR for cutaneous SCC or BCC between 2007 and 2019 in Western Australia. Records were reviewed for basic patient demographics, tumour characteristics, facial nerve status, surgical details, adjuvant therapies, recurrence and survival data.

VARIABLE	UNIVARIATE (LOG-RANK)	MULTIVARIATE (COX REGRESSION)
Clinical factors		
Immunosuppression	0.111	
Recurrent disease	0.002	HR 1.999 (p=0.109)
Pre-operative facial nerve involvement (clinical or radiological)	<0.001	HR 3.411 (p=0.006)
Pre-operative bon involvement	0.196	
Pre-operative external auditory canal involvement	0.734	
Pathological factors		
Differentiation	0.697	
Peri-neural invasion	0.173	
Lymphovascular invasion	0.002	HR 4.908 (p=0.010)
Bone invasion	0.034	HR 2.452 (p=0.116)
Margins	<0.001	HR 0.941 (p=0.906)
Treatment factors		
Neck dissection	0.269	
Adjuvant radiotherapy	0.062	

Table 1. Variables associated with overall survival in patients with squamous cell carcinoma undergoing lateral temporal bone resection.

Results

During our study period, 37 patients had LTBR surgery. Median age 69 years; 32 male patients and 5 females, 8 were immunocompromised. Median duration of follow up was 22 months. Twenty-five had a diagnosis of SCC and 12 BCC. Most tumours had a pre-auricular primary. Overall survival for the SCC group was 68.5% at 2-years and we identified pre-operative facial nerve tumour involvement (clinical or radiological) to be a statistically significant predictor of mortality (HR 3.411, p = 0.006) with all patients dying before 2 years post-operative. Lymphovascular invasion was also a predictor of mortality (HR 4.908, p = 0.010). Locoregional tumour control was achieved in 81% (n = 30) of patients.

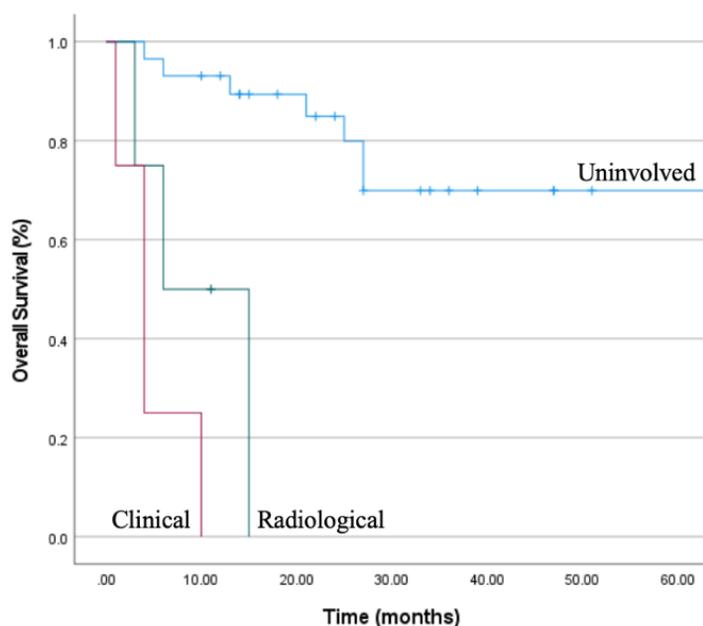


Figure 1. Overall survival for patients with cutaneous malignancies undergoing lateral temporal bone resection; stratified according to pre-operative facial nerve involvement.

Conclusions

Cutaneous malignancy involving the external auditory canal or lateral temporal bone represents advanced stage disease and LTBR offers acceptable local control rates and survival in this cohort of patients. Caution should be used in offering this surgery with clinical or radiological evidence of facial nerve involvement due to the relatively poorer survival outcomes in this subgroup.

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