

# Postoperative Outcomes and Survivorship after Lateral Temporal Bone Resection for Malignancy: A Single Center Retrospective Chart Review



Katelyn Robillard, MD, PhD<sup>1</sup>; Cassidy Nguyen, BS<sup>2</sup>; Rahul Mehta, MD<sup>1</sup>

<sup>1</sup>Department of Otorhinolaryngology, Louisiana State University Health Sciences Center, New Orleans, LA, USA;  
<sup>2</sup>School of Medicine, Louisiana State University Health Sciences Center, New Orleans, LA, USA



## Background

Temporal bone malignancy is rarely a primary neoplasm but more often the result of advanced periauricular skin cancer or parotid gland tumors. These occur in all age groups but typically affect older men. Younger patients are more likely to be diagnosed with a sarcoma and older patients a carcinoma. While radiation therapy has been reported as a treatment option, the standard of care is surgery. Lateral temporal bone resection (LTBR) removes the bony external auditory canal (EAC) en bloc lateral to the facial nerve to achieve negative margins (**Fig 1**). The goal of this project was to determine postoperative outcomes in patients undergoing LTBR for definitive management of temporal bone cancer.

## Methods

The overall research question was as follows: “In patients with malignancy who underwent LTBR, what are the postoperative outcomes, complications, and duration of follow up?” A single-center, retrospective chart review was performed on all patients at our institution who underwent LTBR (CPT 36595) for definitive cancer excision between January 2012 and June 2024. Data collection included demographics, presenting symptoms, primary tumor site and laterality, tumor histology, type of LTBR and adjuvant therapy, length of follow up, disease-free survival, and overall survival.

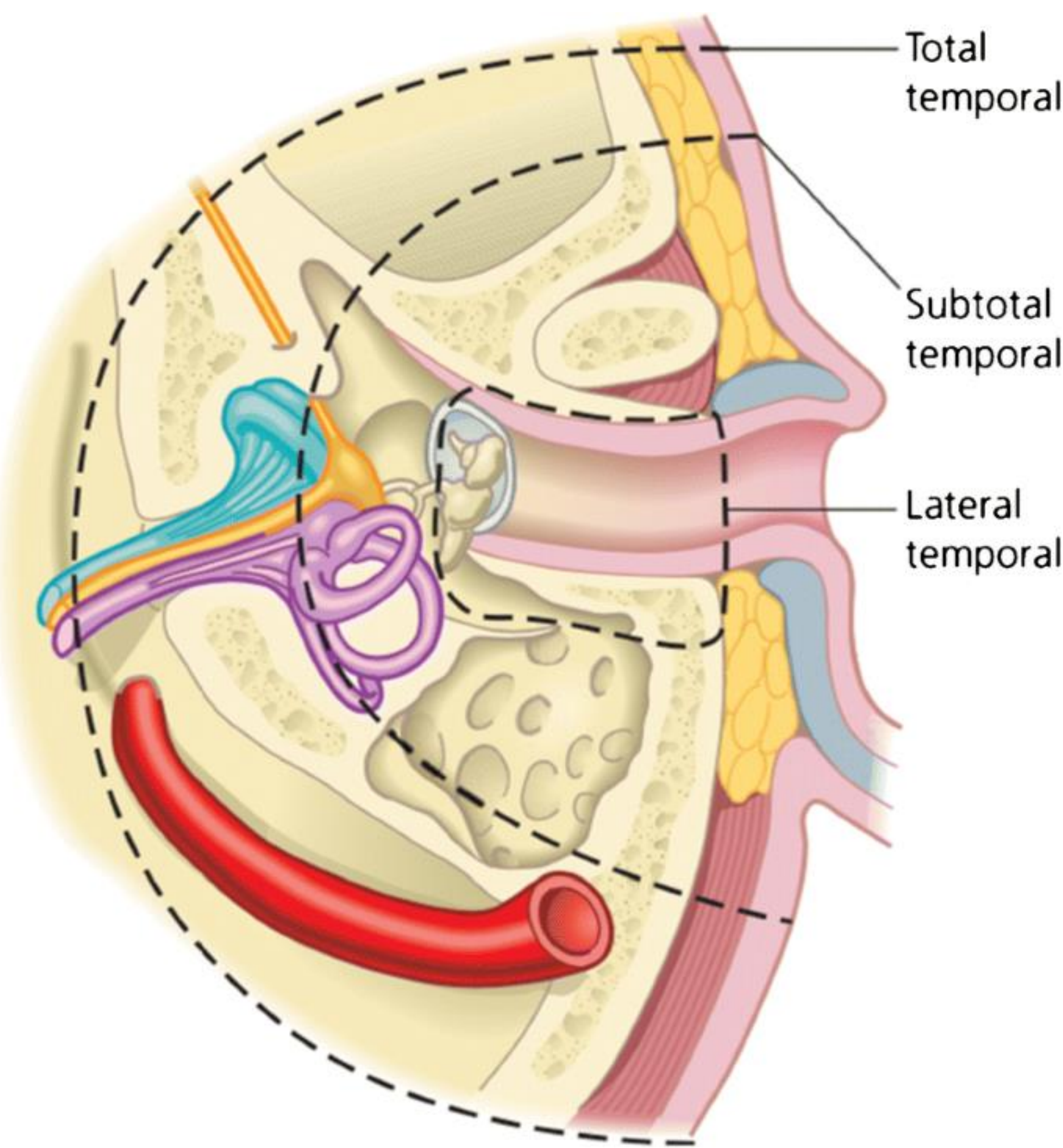


Figure 1: Surgical boundaries of lateral temporal bone resection (LTBR), subtotal temporal bone resection (STBR), and total temporal bone resection (TTBR). Image courtesy of: Magliocca, K.R., Ballestas, S.A., Baddour, H.M. et al. Update in Temporal Bone Resection Outcomes. *Curr Otorhinolaryngol Rep* 7, 58–64 (2019). <https://doi.org/10.1007/s40136-019-00229-x>

## Results

A total of 28 patients were included in our analysis, most of whom were male (93%) and white (89%, **Table 1**). Common presenting symptoms included hearing loss, otalgia, bloody otorrhea, ulcerative lesions, parotid masses, and facial weakness. The primary lesion was more often found on the right side (61%) and involved the auricle (29%), periauricular skin (29%), parotid gland (21%), EAC (18%), or scalp (4%). Histology revealed squamous cell carcinoma in the majority of cases (54%), followed by basal cell carcinoma (21%), salivary duct carcinoma (7%), melanoma, and others. The average age at time of surgery was 66 (range 42 to 88). A traditional LTBR was performed in all patients except one modified LTBR and one subtotal LTBR. 68% of patients received adjuvant radiation and 29% chemotherapy. The average length of follow up was 18 months. There were 5 (18%) local or distant recurrences with an average disease-free survival of 17 months. At the time of this study, the overall survival rate was 86%. For the four patients who were deceased, the average postoperative survival was 27 months.

Table 1: Patient demographics with temporal bone cancer.

No.	Age	Sex	Lat	Location	Path	Management	Recurrence	Deceased
1	57	M	R	Parotid gland	Epithelial-myoepithelial carcinoma	LTBR, XRT	-	-
2	78	M	L	Preauricular skin	SCC	LTBR, XRT	X	X
3	68	M	R	Auricle	SCC	LTBR	X	X
4	68	M	L	EAC	SCC	LTBR	-	-
5	59	M	L	Auricle	SCC	LTBR, CRT	-	-
6	42	M	L	Parotid gland	Salivary duct carcinoma, ex pleo	LTBR, XRT	-	-
7	73	M	R	Facial skin	SCC	LTBR, XRT	X	-
8	75	M	L	Preauricular skin	Spindle cell carcinoma	LTBR	-	-
9	66	M	R	Preauricular skin	BCC	LTBR	-	-
10	71	M	L	Parotid gland	SCC	LTBR, XRT	-	-
11	69	M	R	Facial skin	SCC	LTBR, XRT	-	-
12	62	M	R	EAC	SCC	LTBR, CRT	X	-
13	67	M	R	Auricle	SCC	LTBR, XRT	-	-
14	54	M	R	EAC	SCC	STBR, XRT	-	-
15	52	M	R	Preauricular skin	BCC	LTBR, XRT	X	-
16	73	F	R	Parotid gland	Carcinoma	LTBR, CRT	-	X
17	57	M	R	Auricle	BCC	LTBR	-	-
18	77	M	L	Scalp	SCC	LTBR, XRT	-	-
19	60	M	R	Auricle	BCC	LTBR, Chemo	-	-
20	52	M	L	Auricle	BCC	LTBR, XRT	-	-
21	68	M	R	Parotid gland	Carcinoma	LTBR, XRT	-	X
22	59	M	R	Parotid gland	Salivary duct carcinoma	LTBR, XRT	-	-
23	67	M	R	EAC	SCC	LTBR, CRT	-	-
24	67	M	R	Postauricular skin	SCC	LTBR, CRT	-	-
25	61	M	R	Preauricular skin	Melanoma	LTBR, Chemo	-	-
26	81	M	L	Auricle	SCC	LTBR, XRT	-	-
27	77	M	L	Auricle	SCC	LTBR, Chemo	-	-
28	88	F	L	EAC	BCC	mod LTBR	-	-

## Conclusion

Temporal bone malignancy typically affects older white men and begins as a tumor of the periauricular skin, parotid gland, or EAC. Presenting symptoms are similar to those of benign ear conditions, making early diagnosis difficult. The mainstay of treatment is LTBR with most patients receiving adjuvant radiation and/or chemotherapy. This is generally well-tolerated and leads to disease-free survival in the majority of patients.