



Features and Outcomes of Rapid Early Recurrence in Oral Cavity Cancer Treated with Surgery and Radiation



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Background and Purpose

- Rapid early recurrence (RER) of oral cavity squamous cell carcinoma (OCSCC) between surgery and radiation treatment is assumed to be a poor prognostic indicator¹⁻³
- RER incidence and outcomes are not well studied.
- The purpose of this study was to determine the incidence and outcomes of RER as identified by a neuroradiologist on CT imaging obtained for post-operative radiotherapy (PORT) treatment planning purposes.

Methods

- OCSCC patients who were treated with surgery and PORT with curative intent at a single academic cancer center were identified using an institutional database.
- Patients with prior head and neck radiation, inadequate clinical information, and without available imaging were excluded from subsequent analyses.
- Staging was updated to include 8th edition American Joint Committee on Cancer (AJCC) staging system if adequate information was available.
- RER was defined as the presence of structural gross disease visualized on simulation CT with and without iodinated contrast prior to initiation of PORT.
- A neuroradiologist examined simulation studies retrospectively to identify the presence of and characteristics of gross pathologic disease.
- Statistical analyses were performed using SPSS version 25

Results

- 97 patients were identified after search of an institutional database who were treated with surgery and PORT for oral cavity cancer between October 2010 and August 2020.
- 83 patients had adequate data for analysis.
- Median follow-up for the entire cohort was **30 months**.
- **RER was identified in 30/83 (36.1%) patients**
- The presence of RER was **not significantly associated with primary site (p=0.32), gender (p=0.298), pT stage (p=0.695), pN stage (p=0.249), status as recurrence (p=0.288), or new primary (p=0.405)**.
- The most common primary site for RER was tongue (63.3%), followed by the floor of mouth (6.7%).
- RER was most common in T2 (33.3%) and N3b (36.7%) disease.
- Of the 30 patients with RER identified by neuroradiology, 19 had definitive RT doses (66 – 70 Gy) delivered.

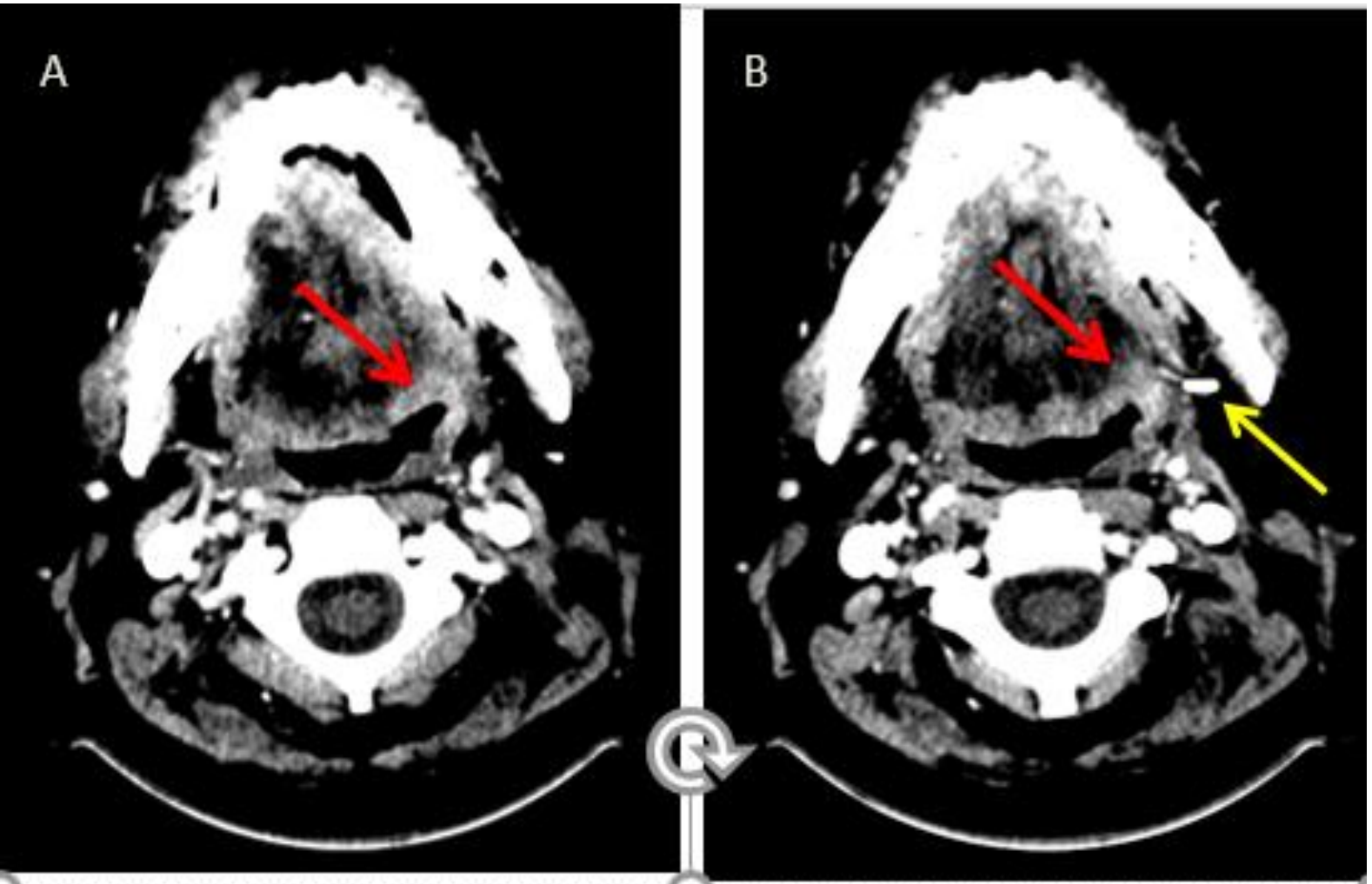
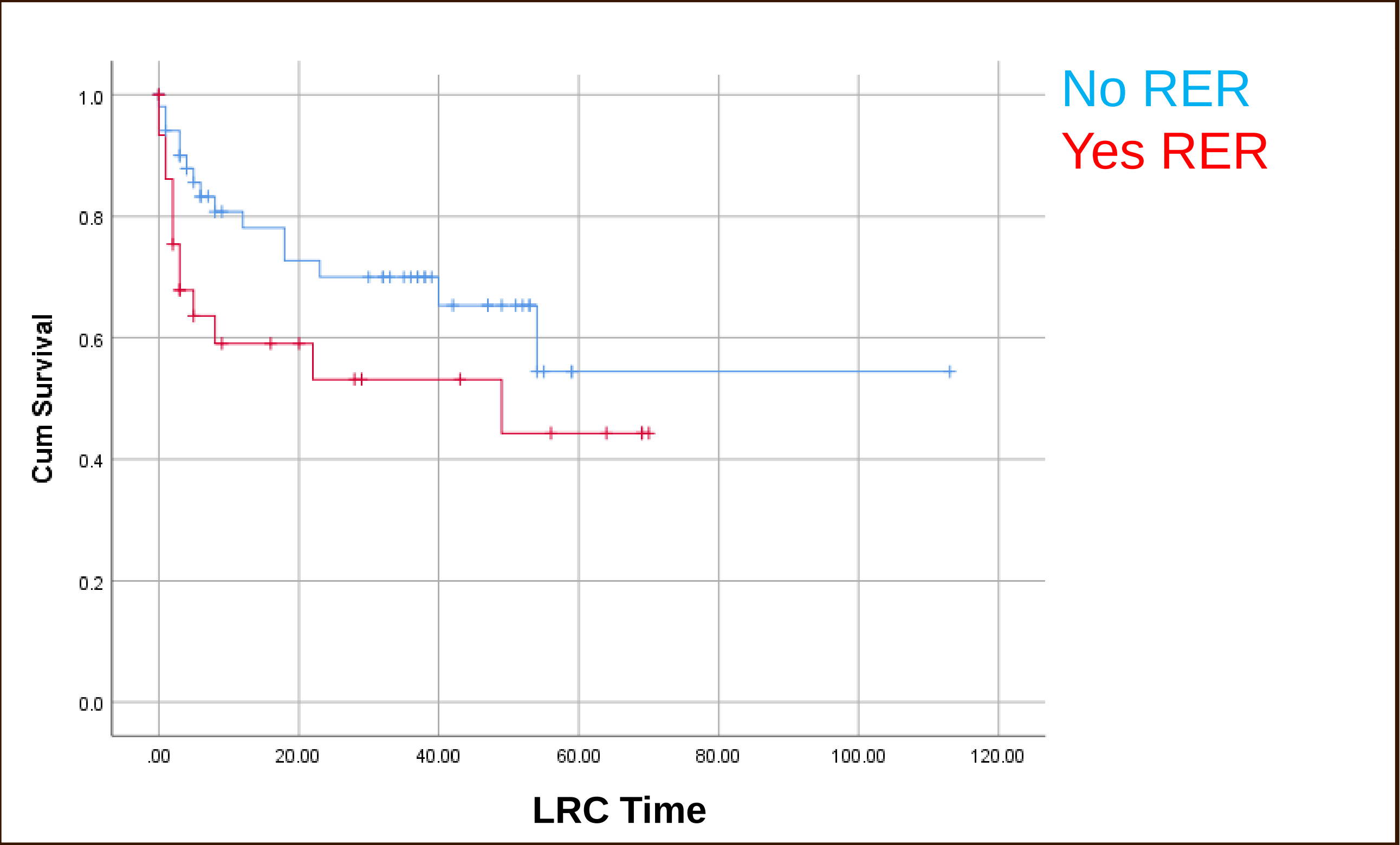


Figure 1. SIM CT adjacent slices A & B: One month post op for left BOT Ca shows recurrence along the left lateral BOT tongue margin (red arrow) adjacent to surgical clips (yellow arrow).

	N	%
Prior Head & Neck Radiation	11	11.30%
Prior Head & Neck Surgery	28	28.90%
Was this a recurrence?	24	24.70%
Was this a second/new primary?	8	8.20%

	N	%
Primary Site		
Tongue	58	59.8%
Gingiva	17	17.5%
Palate	1	1.0%
Floor of mouth	14	14.4%
Buccal	4	4.1%
Unknown	3	3.1%
pT stage		
T0	9	9.3%
T1	16	16.5%
T2	30	30.9%
T3	15	15.5%
T4a	22	22.7%
T4b	2	2.1%
Unknown	2	2.1%
pN Stage		
N0	40	41.2%
N1	12	12.4%
N2A	8	8.2%
N2B	8	8.2%
N2C	2	2.1%
N3B	26	26.8%
Unknown	1	1.0%



- **At two years, locoregional control (LRC) was 70% for patients without RER compared to 55% for those who did have RER (p=0.094).**

Conclusions

- In more than a third of patients requiring PORT for OCSCC, RER is seen at the time of CT simulation when simulation is reviewed by a neuroradiologist.
- This may be more common than previously reported.¹
- The high incidence of RER prior to PORT may suggest that formal restaging prior to PORT with neuroradiology interpretation may be useful. Further study is warranted.

References

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