Oral Cavity Malignancies following Radiotherapy Treatment for HPV-Associated Oropharyngeal Cancer: An Institutional Case Series

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Introduction

Prior studies have reported an elevated risk of secondary malignancies in the irradiated treatment field of cancer patients. The aim of this study was to characterize oral cavity cancer (OCC) developing in patients with prior HPV-associated oropharyngeal cancer (OPC) who received radiation therapy as part of their treatment.

Methods

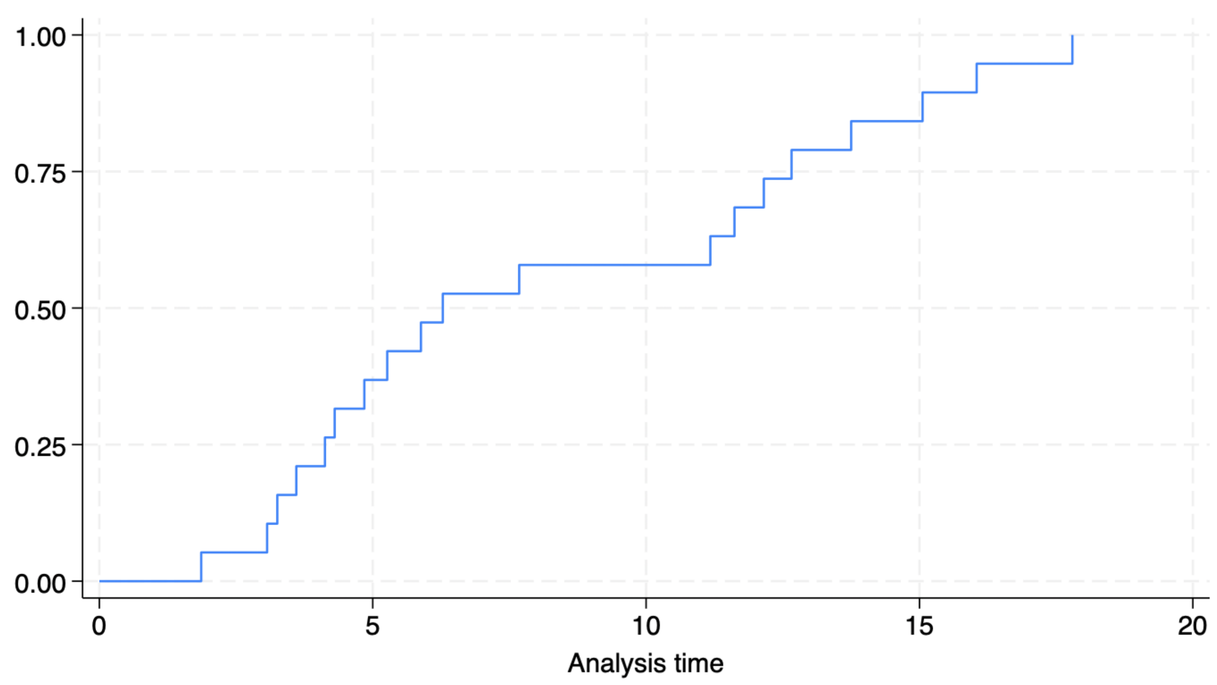
Radiation-related malignancies were defined as OCCs that developed in the irradiated field in patients with HPV-related OPC. Patients with documented pathology reports of HPV-associated OPC (p16+) were included. Patients with missing HPV status were presumed to be HPV-associated if they lacked other traditional risk factors.

Results

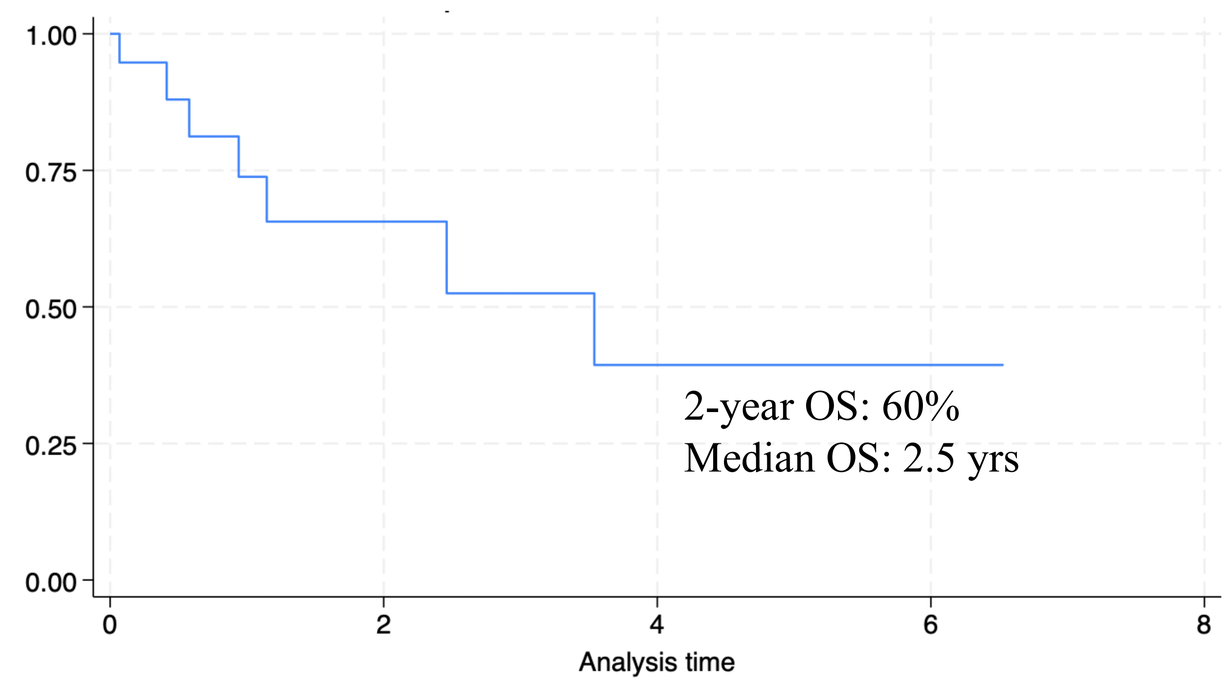
A retrospective review of patients seeking care for head and neck cancer from 2008-2018 was conducted. 22 patients with OCC following treatment of OPC were identified. The majority of patients received radiotherapy as part of definitive rather than adjuvant treatment (68% vs 32%). The 2-year overall survival (OS) rate and median OS after diagnosis of radiation-related malignancy were 60% and 2.5 years.

Characteristic	n (%), *N=22*
Mean age at initial OPC diagnosis, *years*	60.2 (SD 8.1)
Sex	
Female	2 (%)
Male	20 (%)
History of tobacco use	12 (54%)
Radiotherapy for OPC	
Definitive	15 (68%)
Adjuvant	7 (32%)
Time between OPC and OCC diagnoses, mean *years*	8.6 (SD 4.8)
Second primary site	
Oral tongue	15 (68%)
Mandibular alveolus	4 (18%)
Other	3 (14%)
T staging at OCC diagnosis	
T1/T2	15 (68%)
T3/T4	7 (32%)
N staging at OCC diagnosis	
N0	16 (82%)
N1+	6 (18%)
Positive Margins	
No	19 (86%)
Yes	3 (14%)
Perineural invasion	
No	13 (59%)
Yes	9 (41%)
Lymphovascular invasion	
No	17 (77%)
Yes	5 (23%)

Cumulative Incidence of OCC after treatment for OPC



Kaplan Meier of OS for second primary OCC



Conclusion

We present a descriptive analysis of a cohort of patients who developed second primary OCC following radiation therapy for OPC. Given the dramatic rise in the number of OPC survivors, further research on role of radiation therapy in developing second OC malignancies and identifying patients who might be at higher risk is critical.

References

References available upon request.