RADIATION-ASSOCIATED MALIGNANCIES OF THE EAR CANAL AND TEMPORAL BONE
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ABSTRACT
Objective: To examine our experience of surgically treated radiation associated malignancies (RAM) of the temporal bone
Setting: Tertiary Care Referral Center
Study Design: Retrospective review
Methods: Thirteen patients who underwent surgical treatment for radiation associated malignancies of the temporal bone were identified from our database of temporal bone malignancies between 1999 and 2012. Average age at presentation was 54.84 with average follow up of 25.6 months. The presenting symptoms, pathology; interval between initial radiation treatment and development of radiation associated malignancy, treatment regimens; recurrences and outcomes were measured
Results: Of the thirteen cases of RAM’s of the temporal bone, ten patients had squamous cell carcinoma (76%) while three (23%) had sarcomas. The average latency between completion of radiation and diagnosis of the RAM was 13.38 (range 4 – 33 years). We divided the patients into those with RAM limited to the external auditory canal (LEAC) and those with malignancies that extended beyond the external auditory canal (EEAC). Seven patients (54%) had malignancies that were LEAC. The average age of patients with LEAC malignancies was 66 years versus 41.8 years for EEAC patients (p=0.02). These two groups also differed in their rate of negative margins (p=0.007) and need for post-operative adjuvant therapy (p=0.02). The proportion of squamous cell carcinomas and overall survival rates were higher in the LEAC group, but not significantly so. Overall five of our thirteen patients recurred (38.4%), and three (23%) died of their disease during the follow-up period.
Conclusion: To our knowledge this is the largest reported series of surgically treated radiation associated malignancies of the temporal bone. This study highlights the need for vigilance for RAM in post-radiation patients. Outcomes are more favorable when the tumor is confined to the EAC. Outcomes are poorer for patients when the RAM is a sarcoma, when negative margin cannot be obtained, or when additional postoperative radiotherapy is required

INTRODUCTION
• Cahan et al defined the radiation associated malignancy
  • Arising within prior radiation field
  • Distinct from the primary tumor
  • Latency period of at least 5 years
• Sarcomas classically described as radiation associated
• Radiation Associated Squamous Cell Carcinoma has been described especially in low radiation dose regions (50 Gy)
• Otorrhea, otalgia, bloody discharge and in some cases facial palsy are presenting symptoms

REFERENCE