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abstract

Institutional Experience of Adjuvant Radiotherapy for Lacrimal Gland Adenoid Cystic Carcinoma: Balancing Tumor Control and Organ Preservation

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Institutional Experience of Adjuvant Radiotherapy for Lacrimal Gland Adenoid Cystic Carcinoma: Balancing Tumor Control and Organ Preservation

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Introduction: Adenoid cystic carcinoma (ACC) of the lacrimal gland is a rare but aggressive malignancy characterized by perineural invasion, local recurrence, and late distant metastasis. Optimal management remains debated, though combined surgery and adjuvant radiotherapy is widely advocated for high-risk disease.

Case Description: We report a 56-year-old male who presented with progressive left orbital swelling and ptosis. Imaging demonstrated a bulky lacrimal gland mass abutting the globe and extraocular muscles. Histopathology following excisional biopsy confirmed high-grade ACC with solid pattern and perineural invasion. Staging FDG PET/CT revealed no distant disease.

The patient received adjuvant radiotherapy to a total dose of 66 Gy in 33 fractions using a sequential VMAT technique. Target volumes were delineated using fused pre- and postoperative MRI, incorporating neural pathways at risk. Strict dose constraints were applied to the optic apparatus.

Treatment was well tolerated, with only mild acute periorbital erythema and no visual or neurological toxicity.

Conclusion: This case highlights the importance of precision adjuvant radiotherapy in managing high-risk lacrimal gland ACC. Conformal dose escalation enabled optimal target coverage while preserving visual function, supporting eye-sparing strategies in carefully selected patients.

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