

RADIATION-INDUCED RECURRENT MYXOID LIPOSARCOMA OF THE NECK FOLLOWING CURATIVE TREATMENT OF NASOPHARYNGEAL CARCINOMA

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Background

Radiation-induced sarcoma (RIS) is a rare, aggressive late complication of radiotherapy (about 0.15% of irradiated patients; mean latency ~11 years) and is hard to tell apart from tumor recurrence. EBER is positive in nearly all nasopharyngeal carcinomas (NPC), including metastases.

Case Presentation

35-year-old man treated at ~18 years for **NPC, stage T4N2** with radical concurrent chemoradiotherapy; complete response.

13 years later: right cervical nodal mass (2.6 x 3.4 x 3.4 cm), intensely FDG-avid (SUV ~23) with **no nasopharyngeal or distant disease** on PET/CT.

Neck dissection: epithelioid malignant neoplasm in 1 of 13 nodes (22 mm). **Negative:** pancytokeratin, CK5/6, CAM5.2, CK8/18, HMW-CK, p40, p63, EMA and other lineage markers. **Only vimentin positive.** Called **"metastatic NPC"** on history.

Clinical Course

Interval	Event
+1 year	FNAC: "metastatic carcinoma". Excision: EBER-negative , desmin+ pleomorphic sarcoma
+8 months	Recurrence; excised with hyoid bone, margins involved
Next relapse	FNAC again "metastatic carcinoma"; excision: grade 1 myxoid liposarcoma (FNCLCC), ypT2, margin involved
Outcome	Surgery + 6 cycles ifosfamide / doxorubicin ; MRI and CT: no evidence of disease , ECOG 1

Evolving Histology

Specimen	Findings	Diagnosis
Nodal tumor	Epithelioid; keratin-negative, vimentin+	Read as "metastatic NPC"
1st recurrence	Bizarre spindle cells; desmin+, EBER-negative	Pleomorphic sarcoma
2nd recurrence	Pleomorphic spindle cells, margins involved	Pleomorphic sarcoma
Later excision	Gelatinous, 4-5 mitoses/10 HPF, ~90% viable	Myxoid liposarcoma

Discussion

- Fulfil modified Cahan criteria:** arose in the irradiated field, ~13-year latency, histologically distinct from NPC, normal tissue before radiotherapy.^{2,3}
- Anchoring bias:** a keratin- and EBER-negative tumor is incompatible with NPC and should prompt a search for non-epithelial malignancy, including RIS.^{10,12}
- FNAC misled twice:** reported carcinoma while every excision showed sarcoma. Use core or excisional biopsy with a broad IHC panel.⁹
- Heterogeneity:** epithelioid, then pleomorphic, then myxoid liposarcoma, a rare RIS subtype.^{4,6} FUS::DDIT3 testing was not done (limitation).
- Management:** R0 resection is the strongest prognostic factor.³⁻⁵ Ifosfamide/doxorubicin followed repeated margin-positive relapses; disease-free at follow-up versus reported 14-38% 5-year survival.⁷

Conclusions: A keratin- and EBER-negative neck tumor years after chemoradiotherapy for NPC **should not be reflexively called metastatic carcinoma**. Excisional biopsy with an adequate IHC panel reveals radiation-induced sarcoma. Complete resection and long-term surveillance of NPC survivors are essential.

References

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