

The Multidisciplinary Safety Net: Closing the Loop on Diagnostic Misclassification in Rare Salivary Gland Malignancies

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Background

Diagnostic errors in rare malignancies can result in significant delays in curative treatment. Multidisciplinary Tumor Boards (MTBs) serve as critical safety mechanisms to identify clinical-pathologic discordance and trigger diagnostic reassessment. This case highlights how early misclassification of a salivary gland lesion led to delayed diagnosis and increased treatment morbidity.

Case Summary

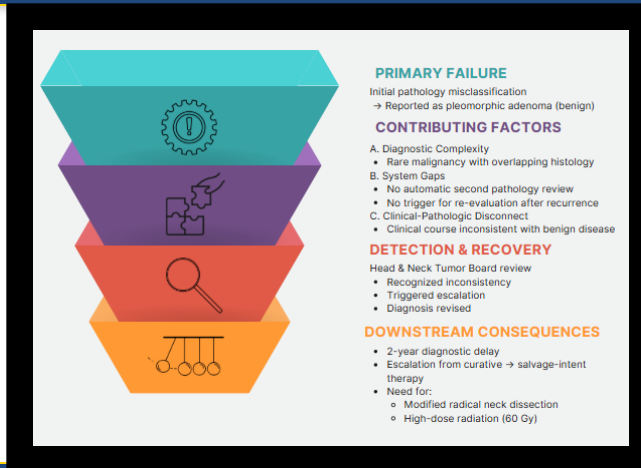
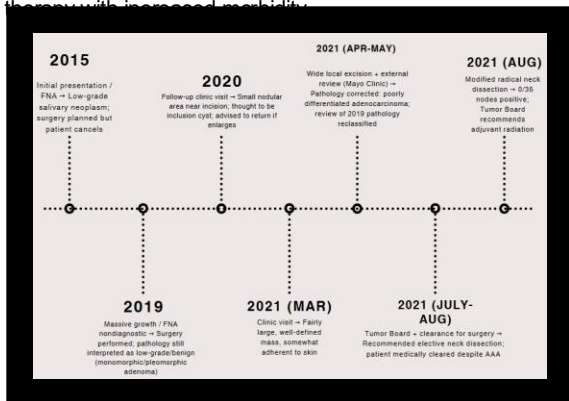
Patient: 76-year-old male with COPD and large abdominal aortic aneurysm presenting with a right submandibular mass.

2015: FNA demonstrated a low-grade salivary neoplasm; surgery was deferred and conservative management pursued.

2019–2020: Progressive growth with nondiagnostic FNA and surgical pathology repeatedly interpreted as benign/low-grade, with recurrence attributed to an inclusion cyst.

2021: Development of a larger, adherent mass prompted excision and external review, revealing poorly differentiated adenocarcinoma with reclassification of prior specimens.

Outcome: Multidisciplinary Tumor Board guided definitive management with neck dissection (0/35 nodes) and planned adjuvant radiation. Diagnostic delay necessitated salvage-intent therapy with increased morbidity.



Results

Diagnostic Delay: ~2 years between initial surgical pathology (2019) and definitive diagnosis (2021)

Pathology: External review reclassified prior specimens as poorly differentiated adenocarcinoma

Surgical Outcome: Modified radical neck dissection with 0/35 lymph nodes positive

Imaging: No evidence of distant metastatic disease on staging studies

Treatment: Recommendation for adjuvant radiation therapy (60 Gy)

Clinical Impact: Delay in diagnosis necessitated salvage-intent therapy, resulting in increased treatment intensity and long-term morbidity

Conclusion

This case demonstrates that reliance on a single diagnostic pathway can lead to prolonged misclassification in rare malignancies.

Key Lessons

- Multidisciplinary Tumor Boards are essential diagnostic safety nets, not just treatment planners.
- Recurrent lesions initially labeled benign should undergo mandatory re-review.
- External pathology consultation is critical when clinical and histopathologic findings diverge.

System-level redundancy, rather than individual judgment, is necessary to prevent diagnostic delay and reduce patient morbidity.

Discussion

This case demonstrates how diagnostic errors in rare salivary gland malignancies can persist despite multiple evaluations, delaying curative therapy

Key Factors

- Pathology Misclassification: Initial and repeat specimens were interpreted as low-grade, masking malignancy.
- Anchoring Bias: Clinical teams relied on the initial “benign” diagnosis, reinforcing conservative management.
- System Gaps: No formal protocol for re-review of recurrent lesions, exposing structural vulnerability

Corrective Measures:

- Multidisciplinary Tumor Board (MTB) triggered external pathology consultation, correcting the diagnosis.
- Salvage-intent surgery and adjuvant therapy were planned, though with higher morbidity

Clinical Implications:

- MTBs should act as diagnostic filters, not just treatment planners.
- Institutions should implement mandatory re-review protocols for recurrent lesions.
- External consultation and multidisciplinary discussion improve diagnostic safety and patient outcomes.

References

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