Pediatric Mucoepidermoid Carcinoma vs Canalicular Adenoma: A Case Report

Robert Frederick MD[1]; Thomas Gallagher DO[2]
[1]Department of Otolaryngology Eastern Virginia Medical School; [2]Department of Otolaryngology Children's Hospital of the King's Daughter

Introduction

- Mucoepidermoid carcinomas (MEC) are the most common malignant salivary gland tumor, most commonly from the parotid gland, but can be found in other major and minor salivary glands.[1]
- Histologically, MEC's are comprised of epidermoid, mucus-secreting cells, and cells of intermediate differentiation between the two, all in varying proportions, with columnar, clear cell and oncocytoid features.[2]
- Canalicular adenomas (CA) are much less common than MEC, benign,[3,4] and appear histologically as encapsulated columnar cells organized in loose connective tissue stroma.[5]
- Salivary gland tumors have variable morphology with overlapping features.[6]
- Treatment for both is surgical excision, but the malignant potential of MEC vs CA underlies the theme of this case report and the vitality of distinguishing the two for margins and subsequent surveillance.

References

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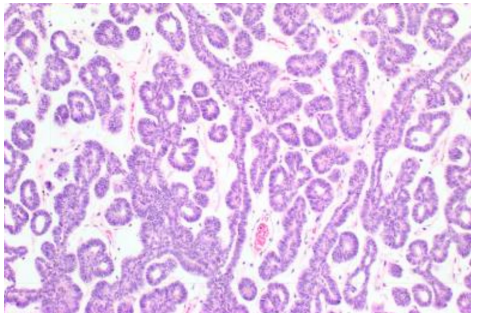
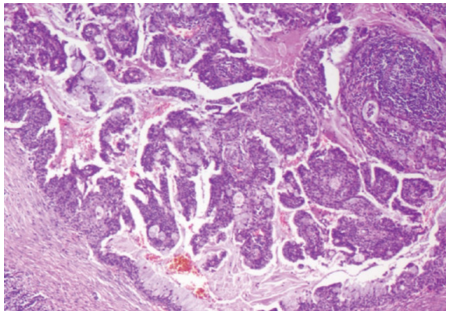
Case Description

- HPI: 18yo Female presenting (4/26/23) with asymptomatic right cheek mass of 7 months duration
- Physical Exam: Right buccal cheek with a firm 2-3cm mass without overlying skin changes. No facial asymmetry, no palpable cervical LAD
- Differential diagnosis: malignant salivary gland tumour, dermoid cyst, pilomatricoma
- Work Up:
  - MRI Face w/wo contrast (05/06/2023): Nonspecific 1.7 cm solid and cystic lesion in the right buccal space adjacent to the body of the right mandible with no associated bone erosion or lymphadenopathy. Favored to be benign in etiology; however, biopsy/excision is recommended.
  - FNA (06/29/2023): consistent with a neoplasm of a minor salivary gland. There are not atypical features in the current sample. Differential includes, but is not limited to, canalicular adenoma. Clinical and radiological correlation is recommended.
- Surgical excision (07/14/2023): easily separated off the surrounding musculature due to its well circumscribed nature. No margins taken at the time of surgery due to favored benign etiology.
- Final surgical pathology: Grade 1, well differentiated mucoepidermoid carcinoma (MEC) with negative margins. Classified as a T1N0M0, stage 1 minor salivary gland tumor per AJCC grading.
- Adult multidisciplinary Head & Neck Tumor Board conference recommended baseline imaging (CT Neck & Chest) for locoregional or distant metastases evaluation; then clinical surveillance q3 months for the first 2 years, followed by q6 months for the following 3 years; with regional ultrasound q6 months for the first 2 years, and then annually for the following 3 years.
- CT Neck & Chest 08/15/2023 no concerning findings for locoregional metastases.



Canalicular Adenoma histology example

Thompson LD, Bauer JL, Chiosea S, et al. Canalicular adenoma: a clinicopathologic and immunohistochemical analysis of 67 cases with a review of the literature. *Head Neck Pathol*. 2015;9(2):181-195. doi:10.1007/s12105-014-0560-6



Mucoepidermoid carcinoma histology example

Sharma S, Khan S, Valiathan M. Mucoepidermoid carcinoma - A common neoplasm at an unusual site, mimicking a benign cyst on cytology: Diagnostic pitfall!. *J Oral Maxillofac Pathol*. 2022;26(Suppl 1):S30-S33. doi:10.4103/jomfp.jomfp_277_21

Discussion:

- Important to view any tissue diagnosis as only a part of the whole clinical story. Combine this with the patient's history, physical exam, and the physician's knowledge of a disease process and most likely etiology
- Maintain a broad differential - the correct final diagnosis (MEC) was at top of initial differential, but the FNA read altered this and, in turn, the clinical and surgical decision making
- CA is a slow growing lesion that predominantly affects the buccal mucosa and hard palate, which made sense with the clinical picture
- However, current literature shows that minor salivary gland tumors are more likely to be malignant, thus, favoring MEC.
- MEC originating from minor salivary glands is more common (21% of all intraoral minor salivary gland tumors in one study) than CA (11% of all intraoral minor salivary gland tumors in that same study).[3] Keep in mind the old adage "common things being common," this rare call on the FNA should have been trusted, but further verified.

Teaching Points

1. Salivary gland lesions present with variable, overlapping morphology, creating a diagnostic challenge
2. One must maintain a large differential diagnosis, and trust but verify pathologic diagnoses
3. Always err on side of taking margins if concerned for malignancy