A Case Study Highlighting the Need for Surgical Evaluation of Parotid Masses

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ABSTRACT

Parotid tumors account for a relatively small percentage of head and neck tumors; when encountered, they can be diagnostically challenging. Clinical presentation is variable, and imaging and biopsies can be misleading. The delay of accurate diagnosis and treatment of parotid masses can have significant consequences with regard to patient morbidity and mortality. Presented here is a case of a tender parotid mass in a 41 year-old HIV positive patient that was initially thought to be a benign lymphoepithelial lesion. After an inconclusive biopsy, the lesion was surgically excised and identified as a mucopidermoid carcinoma. Since surgical excision can be both diagnostic and therapeutic, we suggest that referral for surgical evaluation remains the recommended course of action for all parotid masses.

INTRODUCTION

Roughly 5% of all tumors of the head and neck are primary salivary gland tumors, with the parotid gland being the most common location (75% of cases).¹ Of these parotid tumors, about 20% are malignant.¹ Although they comprise a small subset of tumors in the United States, parotid neoplasms can present a dangerous diagnostic challenge if inappropriately approached. When disease is identified early on, there is a reasonable chance of disease resolution via surgical excision. However, if treatment is delayed, metastatic disease can result, which leads to a much poorer prognosis. The literature reports numerous parotid malignancies with atypical clinical presentation, including unusual imaging characteristics and misleading biopsies. Such atypical presentations can delay accurate diagnosis and surgical intervention. Even benign parotid tumors often warrant surgical excision in
order to prevent the strong possibility of eventual malignant transformation. With this in mind, we report a case of a tender parotid mass with a previously inconclusive biopsy that was diagnosed as mucoepidermoid carcinoma after excision.

CASE REPORT

A 41 year-old HIV-positive African American female presented to the outpatient otolaryngology clinic, complaining of a tender right-sided neck mass of 8 months duration that had been gradually increasing in size. She also reported right otalgia but did not display any associated facial nerve weakness. She had a history of radiation therapy for glioblastoma multiforme, but denied any other past surgical or medical history. Physical exam was grossly normal with the exception of a tender parotid mass roughly 4 cm in diameter. A previous core biopsy of the lesion at another hospital yielded inconclusive results. A computed tomography (CT) scan of the neck revealed a 26x53 mm mass with multiple cystic foci in the superficial parotid gland (Figure 1). Initially, the mass was thought to be a benign lymphoepithelial lesion (BLEL), as these are a well-known cause of parotid enlargement in HIV-positive patients. The patient opted for surgical excision of the mass and subsequently underwent right superficial parotidectomy with facial nerve dissection and preservation. The specimen was determined to be an intermediate grade mucoepidermoid carcinoma. The patient later underwent selective neck dissection of levels II-IV on the right side, in which all obtained nodes were negative. After excision, the patient was referred for adjuvant radiation therapy.

DISCUSSION

Parotid tumors typically present as a slowly enlarging mass in the preauricular region, with or without associated tenderness. The time from symptom onset to clinical presentation can vary from weeks to decades. Of the parotid neoplasms, pleomorphic adenoma is the most common benign entity (61.6% of benign lesions); mucoepidermoid carcinoma is the most common malignancy (34% of malignant lesions). The rarity of these tumors has made etiologic studies difficult. However, it has been established that while tobacco use and alcohol do not appear to be strong risk factors, exposure to ionizing radiation and nitroso compounds significantly increases the risk for parotid cancer.

Although parotid malignancies are rare, they can be variable in presentation and difficult to diagnose when they occur. In a review of 341 salivary gland fine needle aspiration biopsies (FNAB) by Stewart et al., only 87% of malignant neoplasms were diagnosed accurately by cytology. Goldman et al. reported a case in which four FNABs over a period of 12 years failed to diagnose mucoepidermoid carcinoma due to the cystic structure and heterogeneous distribution of malignant components. Awwad and Hsu reported a mass in which three FNABs returned as an inflammatory process and a CT-guided core biopsy was determined to have no evidence of malignancy as well. Intraoperative frozen section determined that the mass in question was actually mucoepidermoid carcinoma. In HIV-positive patients, the prevalence of BLEL as an etiology of parotid masses can cause further confusion. This diagnostic dilemma may also occur in children, in whom an accurate FNAB can be more difficult to obtain due to patient intolerance. In a case series by Jaryszak et al., three of the five parotid masses excised in children were malignant. Thus, the authors proposed that a low threshold for surgical excision is warranted in pediatric patients who either fail an initial course of antibiotics for an inflammatory mass, or who are unable to cooperate with FNAB for a non-inflammatory mass.
With 20% of all patients developing distant metastases from parotid cancer and a mean survival in this group of 4.3-7.3 months, early diagnosis and treatment of these tumors is imperative.\(^1\) Of note, some authors believe that salivary duct carcinomas—which have a metastasis rate of 52-82%—are actually carcinoma ex-pleomorphic adenomas that arise from the most common benign salivary gland tumor.\(^2\) Additionally, the risk for malignant transformation to carcinoma ex-pleomorphic adenoma is 1.5% within the first year of diagnosis and 10% after observation for more than 15 years.\(^3\) Thus, observation of these lesions, as well as other benign lesions, is not recommended in patients stable enough for surgery.

The cases described above demonstrate that even masses that appear benign on imaging and pathology will likely require a diagnostic excision. Assessment by an experienced surgeon can both avoid the delay of appropriate treatment that can result from extensive diagnostic testing and provide patients with knowledge of the risks and benefits of surgical intervention in order to make an informed treatment decision. Based on the variable presentation, potential consequences of delayed treatment and limitations of diagnostic techniques, we propose that referral for surgical evaluation and possible excision continues to be a reasonable course of action for all parotid masses.

**REFERENCES**