Case Presentation

We report a case of Nodular Oncolytic Hyperplasia. What is unique about this case is the presenting symptoms. The patient noted that her cervical nodules were responsive to antibiotics leading us to believe a diagnosis of reactive lymphadenopathy. After full work up and excisional biopsy, the patient was diagnosed with Nodular Oncocytic Hyperplasia.

An 80-year-old female with history of hypertension and seizure disorder presented for evaluation of a 2-month history of left sided neck mass. The mass was painless in nature and located in the left parotid tail and upper cervical region. Patient had been treated with ciprofloxacin for urinary tract infection by her primary care physician, which per patient report, seemed to decrease the size of the left sided neck swelling. Patient was otherwise asymptomatic without hoarseness, dysphagia, or constitutional symptoms. Physical examination demonstrated at least two adjacent nodular lesions in the junction of the parotid tail and upper neck. Masses were firm but mobile, and slightly tender. Remainder of the head and neck exam is unremarkable, and facial nerve is intact. Due to her previous response to antibiotics, the patient was started on a 10 day course of amoxicillin with minimal improvement. Computed tomography scan of the neck with intravenous contrast revealed multiple prominent enhancing masses within the left parotid gland, with the largest measuring 1.8 cm, and in a lesser degree within the right parotid gland, thought to be lymph nodes. Fine needle aspiration of the most prominent left-sided mass revealed normal salivary gland cells. Open excisional biopsy was recommended and performed. Intraoperatively, a 1.5 cm nodular mass was found adjacent to the parotid tail. With further intraoperative exploration and berry picking, additional adjacent nodules were found and excised with the main specimen. Dissection spared the cervical and marginal mandibular branches of the facial nerve. Surgical specimen consisted of multi-lobated maroon brown, firm tissue. Microscopic exam revealed well circumscribed proliferation of oncocytes with dense bright eosinophilic cytoplasm and monomorphic nuclei, without a well-defined fibrous capsule (Figures 1 and 2). Surgery went without complication, post-operative House-Brackmann score of 1/6. Patient is being followed with serial physical examinations.

Discussion

Nodular Oncocytic Hyperplasia (NOH) is a rare, non-neoplastic growth of the parotid gland. It is a type of oncolytic lesion caused by proliferation of the duct system [1]. The World Health Organization (WHO) classification describes three main types of oncocytic lesions: diffuse oncocytosis, focal nodular/adenomatous oncocytic hyperplasia, and oncocytoma [2]. To diagnose NOH, careful cytologic and histologic evaluation must be performed to...
differentiate NOH from the other oncocytic lesions and oncocyte-like lesions. Cytology alone has not been found to be sufficient for diagnosis due to the overlap between the oncocytic lesions.

Oncocytes are epithelial cells with abundant, granular, eosinophilic cytoplasm due to the presence of numerous large mitochondria of varied sizes [3]. In the head and neck, only a small number of lesions are constructed of oncocytes. However, the head and neck are among the more common sites for the development of true oncocytic neoplasms because oncocytes are normally scattered within major and minor salivary gland tissue [4]. Other locations oncocytic tumors can be found include the kidney, breasts, thyroid glands, upper respiratory tract and lacrimal glands [4]. The quantity of oncocytes, and oncocytic tumors can be found include the kidney, breasts, thyroid glands, upper respiratory tract and lacrimal glands [4]. The quantity of oncocytes, and architectural pattern are a few of the main factors in differentiating the types of oncocytic lesions. Nodular Oncocytic Hyperplasia notably has remnants of the original salivary tissue with acini and fatty tissue present between the oncocytic nodules [1]. Cytological evaluation shows loose sheet-like cluster of round to polygonal cells with granular cytoplasm against a hemorrhagic background [5].

Histologically, NOH is formed by many variable-sized nodules, comprising oncocyte-like cells with small round nuclei and eosinophilic granular cytoplasm, without fibrous capsule, that is positive for mitochondrial antibodies [4,5]. The parenchyma of the parotid gland, including serous acini, ducts, and adipose tissue, is interspersed among the nodules [4]. NOH compared to diffuse hyperplastic oncocytosis or oncocytoma, has multiple condensed areas of adipose tissue, is interspersed among the nodules [4]. NOH in the differential diagnosis and can favor it in elderly patients with multiple salivary nodules [7]. This shows that cytology alone is non-diagnostic and a full histologic evaluation is needed when considering oncocytic salivary gland lesions.

Based on the demographics of the patient, cytoplogic and histologic evaluation, our patient was diagnosed with NOH. Complete work-up is paramount as this patient presented with an infectious like etiology rather than salivary gland neoplasm. Evaluation including imaging studies, FNA cytology and histology must be performed to accurately diagnose this particular parotid gland lesion. The best treatment for NOH is complete surgical excision of the lesion [4]. Most cases do not require further evaluation or monitoring as NOH is a benign tumor and recurrence is rare.

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References

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