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Abstract

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize multicentric Warthin tumor (WT) as a potential diagnostic conundrum.

Objective: To present a case of WT involving extraparotid lymph nodes and harboring squamous metaplasia in order to highlight a potential pitfall in the search for presumed carcinoma of unknown primary.

Study Design: Case report and review of the literature.

Methods: The clinical course, radiologic imaging, and histopathology of a single patient were reviewed. A literature review was conducted (PubMed, 1950 to October 2015) for WT involving cervical lymph nodes or harboring squamous metaplasia.

Results: We report the case of a 75-year-old gentleman with an enlarging left-sided neck mass and an ipsilateral parotid mass. Ultrasound-guided fine-needle aspirations of the parotid mass and largest cervical lymph node were consistent with WT and cystic squamous cell carcinoma, respectively. The patient underwent left superficial parotidectomy for WT as well as direct laryngoscopy, transoral CO₂ laser-assisted bilateral palatine tonsillectomy, left lingual tonsillectomy, and left selective neck dissection for carcinoma of unknown primary. Final pathology demonstrated WT in the parotid and in a left periparotid lymph node with focal areas of squamous metaplasia but entirely negative for malignancy.

Conclusions: Warthin tumors can be multicentric in nature and can have extraparotid involvement. These tumors can also harbor squamous metaplasia, which can lead to misdiagnosis as a neoplastic process on fine-needle aspirate. This case illustrates the diagnostic conundrum in which WTs can involve cervical lymph nodes, harbor squamous metaplasia, and masquerade as a carcinoma of unknown primary.

Background

Often presenting as a slowly-enlarging painless mass within the parotid gland, Warthin tumors are benign neoplasms that account for 4-15% of all salivary tumors, representing the second most common salivary gland tumor overall.¹ WTs occur more often in men, frequently in the fifth to seventh decades of life, and have been associated with smoking and autoimmune disease.^{1,2} These benign tumors may be bilateral in 5-14% and multicentric in 12-50%.²

Most cases of WT are uncomplicated with surgical excision completed for definitive management.² Rarely, these benign tumors may be painful, rapidly-enlarging, or extraparotid in location, and may contain foci of squamous metaplasia, all of which can confound diagnosis and management.¹

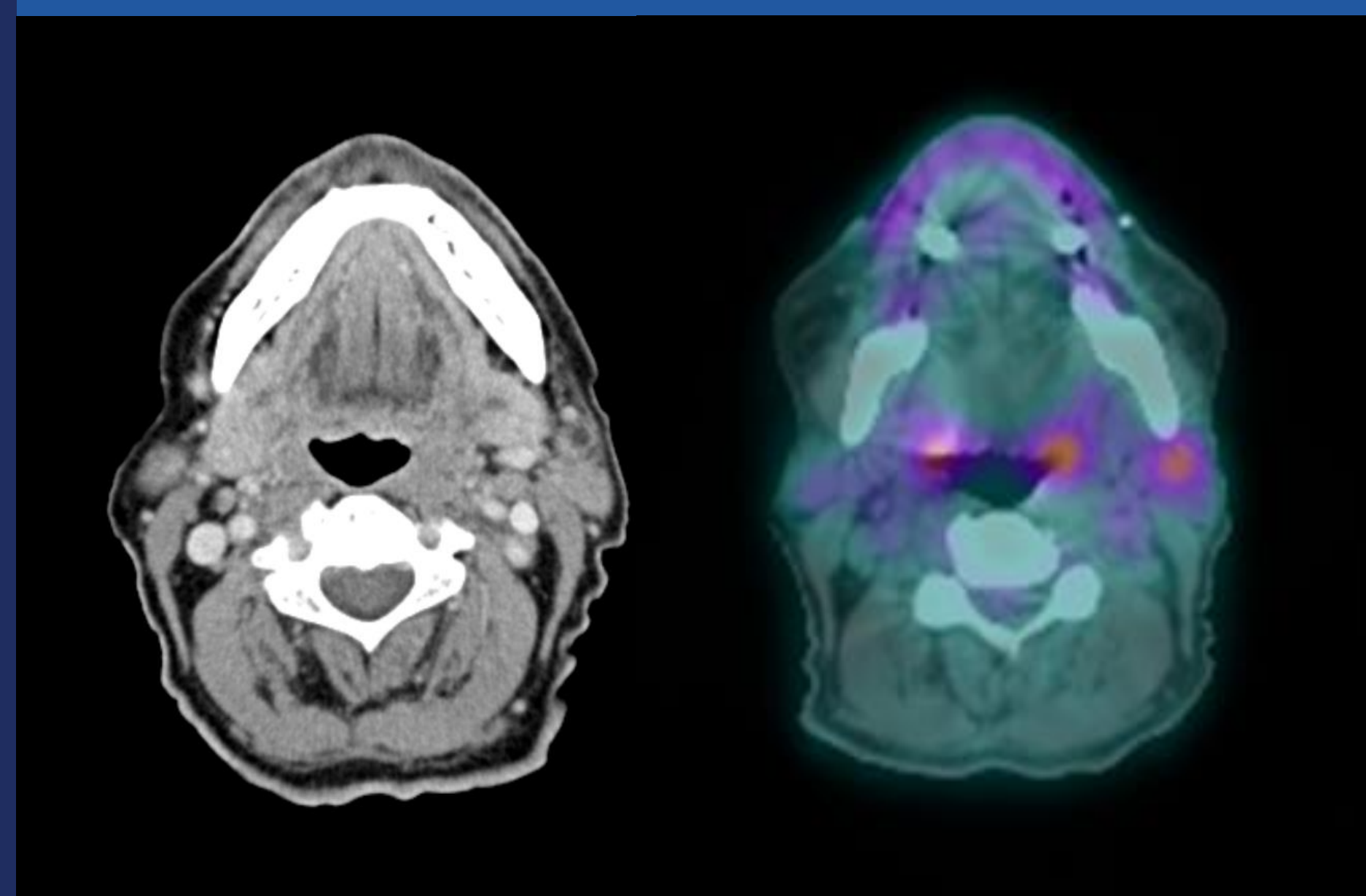
Cervical lymphadenopathy without a readily apparent primary site is a frequent presentation of head and neck cancer, but may rarely represent extraparotid foci of WT. In order to highlight a potential pitfall in the search for presumed carcinoma of unknown primary, we present a case of WT involving cervical lymph nodes and harboring squamous metaplasia.

Case Presentation

We present the case of a 75-year-old gentleman with a 2-month history of an “enlarging, painful left-sided neck mass.” Ultrasound-guided fine-needle aspirate (US-FNA) of this left upper neck mass completed at an outside institution demonstrated “cystic squamous cell carcinoma, compatible with metastasis.” The patient was an active smoker with an approximate 55 pack-year smoking history as well as a left parotid mass, unchanged for 10 years. Physical examination was significant for a well-circumscribed parotid mass and a firm, mobile left upper cervical lymph node. The remainder of his history and physical exam was unremarkable. US-FNA of the left parotid mass was consistent with WT showing abundant lymphocytes and several clusters of cells with oncocytic change including one cell cluster with ciliated epithelial cells. CT scan of the neck and PET/CT scan revealed slight asymmetric enlargement in the left palatine tonsil and mildly increased ¹⁸F-FDG uptake in the left parotid gland, left level IIA lymph node, and left palatine tonsil (Figure 1). Surgical intervention for carcinoma of unknown primary was recommended based on US-FNA cytology from the lymph node suggesting metastatic squamous cell carcinoma.

The patient underwent direct laryngoscopy, transoral CO₂ laser-assisted bilateral palatine tonsillectomy, left lingual tonsillectomy, and left selective neck dissection including levels IB, II, III, and IV for carcinoma of unknown primary. An elective left superficial parotidectomy for WT was also conducted. Final pathology demonstrated WT within the left parotid gland and within a left level IIA lymph node, both with focal areas of squamous metaplasia compatible with the cytologic findings from prior US-FNA (Figure 2). The remainder of surgical specimens were benign and unremarkable. After an uneventful recovery, he underwent no adjuvant therapies and has no evidence of disease recurrence at 1 year follow up.

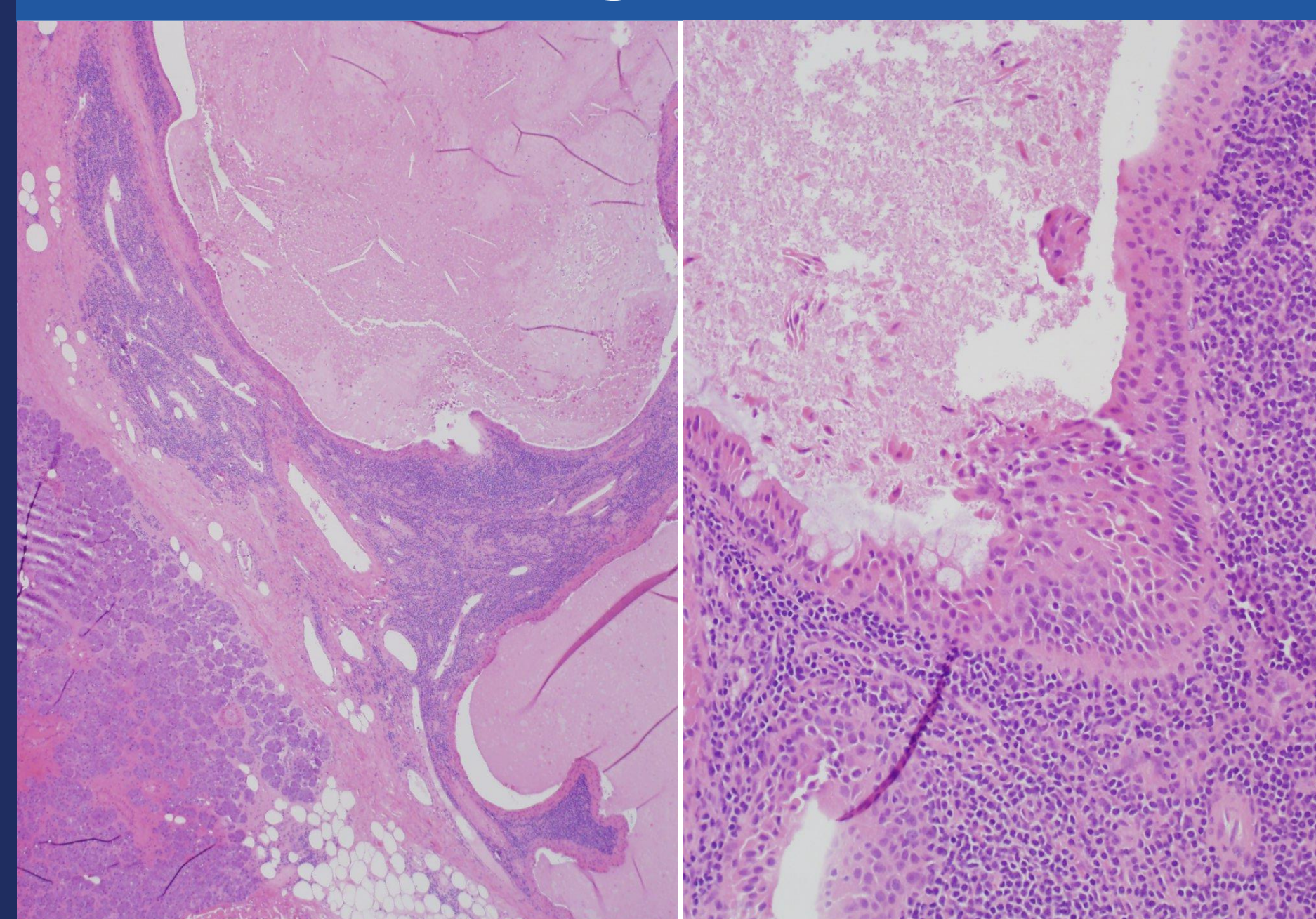
Figure 1



Axial CT scan of the neck with contrast showing slight asymmetry in the left palatine tonsil and enlarged left level IIA lymph node.

Axial PET/CT scan showing increased ¹⁸F-FDG uptake in the left parotid gland, left level IIA lymph node, and left palatine tonsil.

Figure 2



Pathologic sections of the left parotid gland at 40x and 200x demonstrating Warthin tumor, composed of palisading oncocytic cells in a dense lymphoid stroma with cystic spaces. The oncocytic cells focally show squamous metaplasia with reactive atypia and cilia.

Discussion

Warthin tumors, also known as adenolymphomas or papillary cystadenoma lymphomatosum, are found almost exclusively within the parotid gland but may be found elsewhere in up to 12% of cases.^{1,2} The most frequent extraparotid location is within cervical lymph nodes; however, case reports have described involvement of periparotid lymph nodes, submandibular glands, oral cavity, larynx, and nasopharynx.²⁻⁴

The histogenesis of WTs is controversial and disputed in the current literature, though the heterotopic theory seems to be the most widely accepted.^{4,5} This theory suggests that WTs develop from epithelial components of salivary ducts and acini that become trapped within lymphoid tissue, ultimately leading to an immune response to proliferating ducts and secretions within the lymph nodes over time.^{4,5} The delayed encapsulation of the parotid gland during normal embryogenesis may also account for the propensity of extraparotid involvement.^{4,5}

These cystic, smooth tumors have well-defined capsules on gross appearance and display a distinctive histological appearance with variable proportions of lymphoid stroma and papillary epithelium.^{1,2} Imaging is often helpful in workup of WT which have a characteristic well-defined round or ovoid appearance with a microcystic component on US and usually demonstrate high ¹⁸F-FDG uptake on PET/CT.³

Definitive diagnosis of WT is most accurately established by histologic analysis, though cytologic examination is often used due to the convenience and low morbidity of US-FNA. If all 3 major components (oncocytic cells, lymphoid stroma, and necrotic debris) are identified, cytology allows an approximate 70% accuracy rate.^{1,3} A significant drawback of FNA interpretation is that an estimated 26% of WTs are misdiagnosed as potential carcinoma or other neoplastic process as reported by one large retrospective review on the matter.⁶ A relative lack of typical features of WT or overabundance of squamous metaplasia, mucinous background, spindle-shaped cells, and cystic or inflammatory debris may account for these misinterpretations on cytopathology.⁶

When atypical cytologic findings such as squamous metaplasia are procured from an extraparotid WT, it may masquerade as metastatic squamous cell carcinoma. One must understand this diagnostic conundrum in order to avoid a potential pitfall in the search for a carcinoma of unknown primary.

Conclusions

- Warthin tumors can be multicentric in nature and can be located outside of the parotid gland, most commonly in cervical lymph nodes.
- Warthin tumors may also harbor squamous metaplasia, often being misdiagnosed as a neoplastic process on fine-needle aspirate.
- This case illustrates the diagnostic conundrum in which WT can involve cervical lymph nodes, harbor squamous metaplasia, and masquerade as a carcinoma of unknown primary.
- Understanding atypical presentations of WT and diagnostic limitations of FNA allows for appropriate management of these benign tumors.

References

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