Kulak Burun Bogaz Ihtis Derg 2012;22(4):236-240 doi: 10.5606/kbbihtisas.2012.046

Case Report / Olgu Sunumu

Syncronized Warthin's tumor in bilateral parotid gland and nasopharynx

İki taraflı parotis bezi ve nazofarenks yerleşimli senkronize Warthin tümörü

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Warthin's tumor is a benign salivary gland tumor of the parotid gland. Although bilateral or multicentric involvement of the parotid gland is common, extraparotid involvement is seen rarely. The nasopharynx is an unusual region for extraparotid involvement. In this article, we present a 52-year-old male case with a syncronized Warthin's tumor in the bilateral parotid gland and nasopharynx, and we discuss the clinical management of the disease.

Key Words: Bilateral; multicentric; nasopharynx; Warthin tumor.

Warthin tümörü, parotis bezinin benign tükürük bezi tümörüdür. Parotis bezinin iki taraflı veya çok merkezli tutulumuna sıkça rastlansa da parotis dışı tutulum nadiren görülür. Nazofarenks de parotis dışı tutulumun nadir görülen bir bölgesidir. Bu makalede, iki taraflı parotis bezi ve nazofarenks yerleşimli senkronize Warthin tümörü olan 52 yaşında erkek bir olgu sunuldu ve hastalığın klinik tedavisi tartışıldı.

Anahtar Sözcükler: Bilateral; multisentrik; nazofarenks; Warthin tümörü.

Adenolymphoma of the parotid gland was first described in 1895 by Hildebrand. In 1929, Alfred Scott Warthin described a series of parotid and brachial cysts as papillary cystadenoma lymphomatosum, leading to the more well-known term, "Warthin's tumor" (WT).[1] Warthin's tumors are benign head and neck tumors with characteristic histological features. The true incidence of WT is difficult to estimate, as there appear to be regional, national, and racial differences, as well as an increase in incidence during the last decade. Although the etiology is not well understood, there is an association with cigarette smoking, particularly if the WT is bilateral, and there is also a striking male predominance.[1]

A Warthin's tumor is found commonly in the superficial lobe of the parotid gland near the angle of the mandible. This tumor has also been reported in the parapharyngeal space and less commonly in the submandibular gland and the minor salivary glands of the lower lip and palate. In the nasopharynx, this tumor is quite rare; there are only a few reports in the literature. The first case of synchronized nasopharynx and parotid gland WT was reported by Low and Ng in 2002.[2]

In the present study, we report a male case with synchronized bilateral parotid gland and nasopharynx WT. To our knowledge, it is the first case in literature.

Received / *Geliş tarihi:* January 14, 2012 Accepted / *Kabul tarihi:* March 20, 2012

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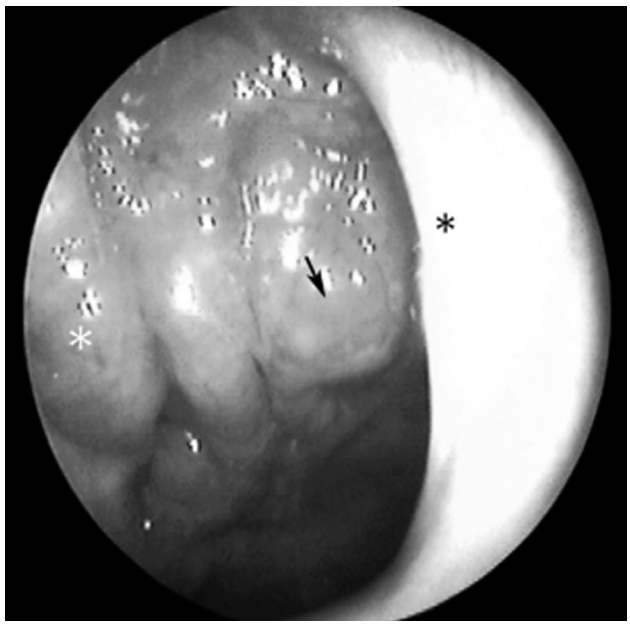

Figure 1. *Warthin tumor in nasopharyx. Arrow indicates Warthin tumor area, white (*) indicates torus tubarius, black (*) indicates septum nasii.*

CASE REPORT

A 52-year-old man presented with a two-year history of a bilateral mass in the parotid region. On physical examination, he had a bilateral parotid mass, 3x3 cm in the right and 2x2 cm in the left. The masses were mobile, firm, and not tender. He had no pain, facial dyskinesia, or sensory disorder on his face. Serous otitis media on the right ear was revealed by otoscopy. A smooth-surfaced mass in the right nasopharynx was detected by diagnostic nasal endoscopy (Figure 1). There were no other remarkable findings on physical exam. Fine-needle aspiration biopsy for parotid masses and punch biopsy for nasopharyngeal masses were performed. Bilateral hypoechogenic and heterogeneous nodular masses with internal and peripheral vascularization were detected on parotid ultrasonography (US). Computed tomography (CT) examination revealed bilateral, well-demarcated parotid masses with prominent contrast enhancement measuring 5x3 cm on the right side and 3x2 cm on the left (Figure 2). Additionally, mild nodular contrast enhancement was detected on the posterior wall of the nasopharynx (Figure 3).

Fine-needle aspiration biopsy (FNAB) under US guidance was carried out on both nodules and was indicative of WT: cellular elements were oncocytic epithelial cells and lymphocytes, with a background of cell debris and proteinaceous material (Figure 4a, b).

Superficial parotidectomy was performed and trans-nasal endoscopic extirpation was planned for the tumor in the nasopharynx. In all sections, histopathologic examination showed a tubulopapillary-cystic pattern within the lymphoid

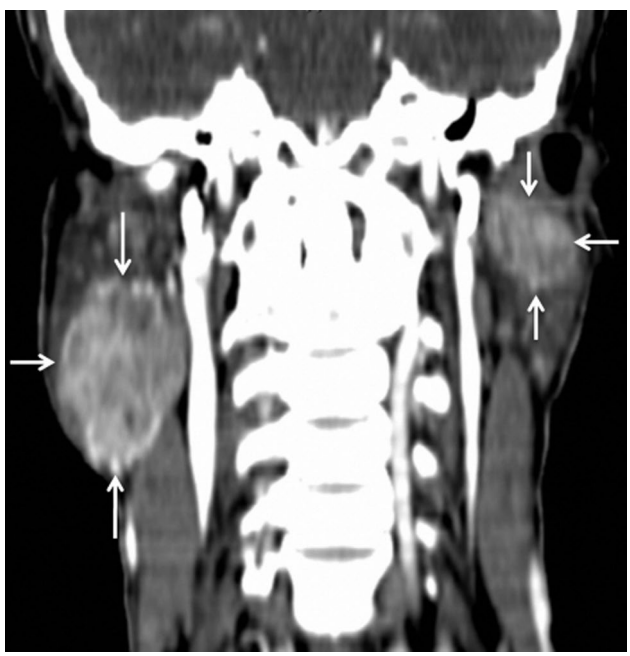

Figure 2. *Bilateral parotid mass on computed tomography. White arrows show the border of masses.*

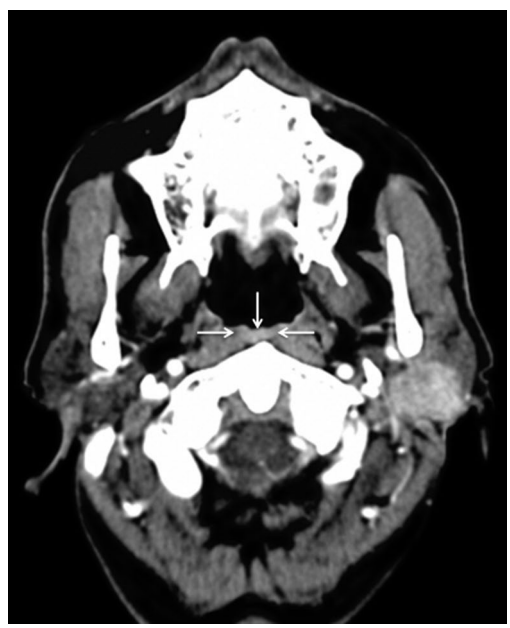

Figure 3. *Nodular contrast enhancement detected on the posterior wall of nasopharynx. White arrows show border of lesion.*

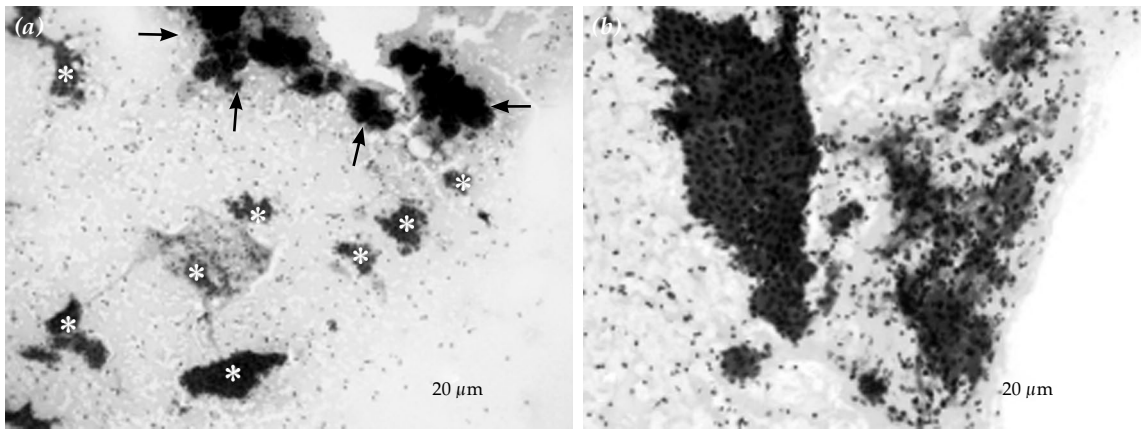

Figure 4. *Warthin tumor cytology. Asterix indicates cohesive flat sheets of oncocytes, and a granular proteinaceous background with lymphocytes.* ***(a)*** *PAP x 50, arrows indicate normal salivary gland cytology and* ***(b)*** *PAP x 100.*

tissue. At high power, the epithelial lining of the cystic spaces consisted of double-layered eosinophilic oncocytes. The luminal layer was columnar epithelium with centrally placed nuclei while the basal layer was cuboidal. A thin basal layer separated the epithelium from the lymphoid stroma. There were no atypical features in any samples. The glandular epithelium was continuous with the respiratory ciliated surface epithelium of the nasopharynx (Figure 5a, b).

Representative formalin-fixed paraffin-embedded tissue sections were selected and stained with antibodies to CD3 (RTU-CD3-PS1, Novacastra) and CD20 (Clone L26, Genemed) using an immunohistochemical autostainer (Leica Bond Max). Immunohistochemical staining properties indicated that the lymphoid stroma of the WT was reactive in the nasopharynx and in the parotid gland.

Additionally, we performed chromosomal analysis of the patient, according to literature regarding the genetic evolution of WT; however, the result of the analysis was normal.

DISCUSSION

Warthin's tumor is the second most common benign salivary gland tumor. It accounts for 5 to 15% of all salivary gland tumors. In several large series, 5 to 20% of cases can be bilateral or multifocal.[3]

Embryologically, the parotid gland is the first salivary gland to develop and the last to become encapsulated. During this late encapsulation, salivary ducts are trapped in the lymph nodes and become the genesis for a WT. The identification of normal nodal structures such as subcapsular sinuses and the occurrence of these tumors in lymph nodes outside the parotid support this hypothesis. Recent immunohistochemical

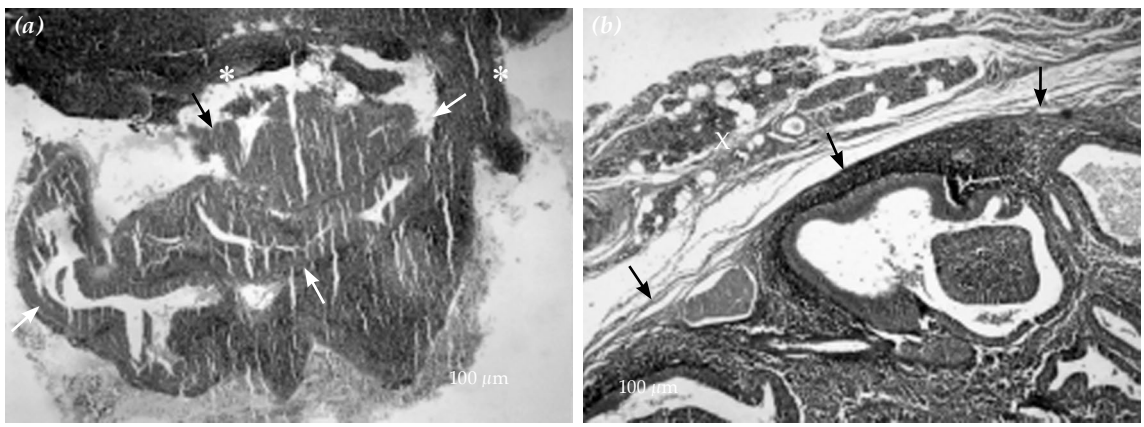

Figure 5. *Warthin tumor in* ***(a)*** *nasopharynx and* ***(b)*** *parotid mass (H-E x 50, arrows show tumor mass, * shows nasopharyngeal epithelium, X indicates parotid gland).*

techniques and cell-surface marker studies indicate that the lymphoid component consists of T-lymphocytes and polyclonal B-lymphocytes. This profile of lymphocyte subsets is similar to that in normal or reactive lymph nodes.[4,5] Accordingly, WTs are found usually in the superficial lobe of the parotid gland near the mandible, which area is rich in lymph nodes, and extraparotid involvement is rare.

The WT is typically well circumscribed and often cystic to varying degrees. The cyst lining is often nodular and tan-white with papillary excrescences, and the fluid contents are characteristically a granular brown, reminiscent of motor oil. The actual parenchyma is nodular and tan to dark brown. Microscopically, the WT is comprised of a papillary proliferation lined by a double layer composed of surface columnar oncocytic epithelium and a smaller basal layer of small cuboidal cells with myoepithelial characteristics. The surrounding stroma contains a highly ordered lymphoid architecture similar to an actual lymph node, with germinal centers often found in cores of the epithelial papillae.[6] Accordingly, in the present case, these features are seen.

In the nasopharynx, the greater parts of the neoplasm are malignant, and benign tumors are rare. Some cases with angiofibroma have been reported. Chordoma, craniopharyngioma, and pleomorphic adenoma of the nasopharynx were also reported as rare benign cases.[7,8]

The nasopharynx has abundant lymphoid tissue and minor salivary glands also exist there. The presence of ectopic salivary duct epithelium and nasopharyngeal lymphoid tissue might explain the development of the WT of the nasopharynx. Some authors have suggested that chronic inflammation might induce reactivating oncocytic metaplasia of salivary gland tissue in lymphoid stroma.[9] Griffiths and Dekker[10] proposed that oncocytic metaplasia represents an early stage in the evolution of a WT.

It is known that a number of cases with WT may be bilateral or multicentric, and incidence has increased in the last decades, especially among women and with smoking. We think that genetic and environmental factors can affect the incidence of WT. Smoking, hormones, radiation, and EBV are some of the suspected environmental factors on etiology.[11,12] Translocation t(11,19) and associated CRTC1-MAML2 fusion oncogene has been found in a subset of WTs.[13,14] These multi-factors can have effects on multicentricity, bilateral involvement, or extraparotidal involvement but have not yet been illuminated exactly. In the present study, we performed chromosomal analyses, but did not detect any anomaly. However, we thought this issue warranted more study.

Benign tumors of the nasopharynx are treated effectively by surgery, but access to the nasopharynx is very difficult. A trans-palatal route or by way of the nasal cavity and sinuses has been preferred. Furthermore, Yumoto et al.[15] recommended the pterygoid approach for large tumors. We think a trans-nasal approach using an endoscope is a less invasive route for suitable nasopharyngeal masses. Classical treatment of benign parotid tumors is superficial or total parotidectomy, although partial parotidectomy is applied by some clinics for caudal parotid masses. However, it should not be forgotten that partial parotidectomy could increase the risk of recurrence. Multicentricity, incomplete surgery, and intraoperative rupture are the known risk factors of increasing recurrence for WT.

Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding

The authors received no financial support for the research and/or authorship of this article.

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