Kulak Burun Bogaz Ihtis Derg
2003;10(6):244-247

CASE REPORT

Metastatic spread of occult papillary carcinoma of the thyroid to the parapharyngeal space: a case report

Gizli tiroit papiller karsinomundan parafarenjeal alana metastatik yayılım: Olgu sunumu

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Metastasis from thyroid carcinomas to the parapharyngeal space is very rare. A forty-year-old male presented with progressive dysphagia and enlargement in the right upper neck. Examination showed medial displacement of the right palatine tonsil and the lateral oropharyngeal wall. A firm, submucosal mass measuring 4x3 cm was palpated. Computed tomography revealed a hypodense and heterogenic parapharyngeal mass with a calcified border. The mass was totally removed by a transcervical approach. Although frozen-section diagnosis was a benign lesion, histopathologic evaluation showed metastasis of papillary thyroid carcinoma to the parapharyngeal lymph nodes. Total thyroidectomy and bilateral selective neck dissection were performed, after which the tumor turned out to be papillary microcarcinoma (0.8x0.8 cm) in the right upper lobe of the thyroid gland. No locoregional recurrences or distant metastasis were observed during a three-year follow-up. The differential diagnosis of parapharyngeal masses should include metastatic thyroid carcinomas, for which a lymphatic route has been suggested between the thyroid gland and the parapharyngeal lymph nodes.

Key Words: Carcinoma, papillary/secondary/diagnosis; lymphatic system; pharyngeal neoplasms/secondary/diagnosis/radiography; thyroid neoplasms.

Tiroit karsinomlarından parafaranjeal alana yayılım çok nadirdir. İlerleyici yutma zorluğu ve boyun sağ üst kısmında şişlik şikayeti ile başvuran 40 yaşında erkek hastada, sağ tonsili ve orofarenjeal duvarı mediale iten 4x3 cm boyutlarında submulozal kitle palpe edildi. Bilgisayarlı tomografide, sağ parafarenjeal boşlukta, 5x4x2.5 cm boyutlarında, hipodens, etrafı kalsifiye kitle saptandı. Kitle transservikal yolla tümüyle çıkarıldı. Frozen-section incelemesinde benign lezyon tanısı konmasına rağmen, çıkarılan örneğin histopatolojik değerlendirmesinde papiller tiroid karsinom metastazı belirlendi. Hastaya total tiroidektomi ve iki taraflı selektif boyun diseksiyonu uygulandı. Ameliyat sonrası değerlendirmede tiroit bezinin sağ üst kutbunda 0.8x0.8 cm boyutlarında papiller mikrokarsinom saptandı. Hastanın üç yıllık izlemi sırasında lokorejyonel ya da uzak metastazla karşılaşılmadı.Parafarenjeal kitlelerin ayırıcı tanısına metastatik tiroit karsinomları da alınmalıdır. Tiroit bezi ile parafarenjeal lenf nodları arasında olduğu bildirilen lenfatik yol bu metastazların nedeni olabilir.

Anahtar Sözcükler: Karsinom, papiller/sekonder/tanı; lenfatik sistem; farenjeal neoplazmlar/sekonder/tanı/radyografi; tiroit neoplazmları.

Parapharyngeal tumors account for 0.5% of all head and neck tumors.[1-3] They are usually benign, but 20% of cases may have a malignant origin.[1,2,4] Neoplasms occupying the parapharyngeal space generally originate either from the salivary glands or from local neurogenic structures. Other rare

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◆ *Received: December 9, 2002. Accepted for publication: April 28, 2003.*

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* *Presented at the 26th National Congress of Turkish Otorhinolaryngology, Head and Neck Surgery (September 22-26, 2001, Antalya, Turkey).*

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◆ *Dergiye geliş tarihi: 9 Aralık 2002. Yayın için kabul tarihi: 28 Nisan 2003.*

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* *26. Ulusal Türk Otorinolarengoloji ve Baş-Boyun Cerrahisi Kongresi'nde sunulmuştur (22-26 Eylül 2001, Antalya).*

pathologies are chordoma, lipoma, chemodectoma, rhabdomyoma, and plasmacytoma.[5,6] Metastasis of thyroid carcinoma to the parapharyngeal space is an extremely rare condition.[4,6,7-11] A lymphatic pathway has been suggested between the thyroid gland and the lateral retropharyngeal lymph nodes in 20% of cases.[11]

CASE REPORT

A forty-year-old male presented with progressive dysphagia and enlargement in the right upper neck. On physical examination, the right palatine tonsil and lateral oropharyngeal wall were displaced medially. A firm, submucosal mass, 4x3 cm in size was palpated. There was no evidence for cranial nerve deficits. No thyroid lesions were palpated. Computed tomography and magnetic resonance imaging revealed a hypodense, heterogenic, and semisolid parapharyngeal mass with a calcified border, measuring 5x4x2.5 cm (Fig. 1a, b). Fine needle aspiration biopsy obtained from the the right upper neck showed a class II mass suggestive of a Warthin's tumor. Involvement of the the parotid gland was ruled out by salivary gland scanning and ultrasonography.

The mass was totally removed by a transcervical approach. After identification and suspension of the major vessels, the posterior belly of the digastric muscle and the stylomandibular ligament were separated to facilitate access to the parapharyngeal space (Fig. 2a). The mass was heterogeneous in consistency and exhibited cystic and solid areas (Fig. 2b). Frozen-section examination showed a benign lesion. No other surgical intervention was made. The histopathologic diagnosis was metastatic spread of papillary thyroid carcinoma to the parapharyngeal lymph node (Fig. 3). Thyroid I^{131} scanning was performed and thyroid ultrasonography was repeated, whereby a mass of 0.8 mm was recognized, that arose from the right upper pole of the thyroid gland. Total thyroidectomy and bilateral selective neck dissection were performed. Histopathologic examination of the surgical specimen disclosed papillary microcarcinoma (0.8x0.8 mm) in the right upper lobe of the thyroid gland (Fig. 4), and reactional hyperplasia of the lymph nodes. I^{131} scanning in the postoperative 6th week demonstrated a small residual thyroid tissue and ablation therapy with I^{131} was administered. No locoregional recurrences or distant metastasis were observed during a three-year follow-up.

DISCUSSION

The parapharyngeal space is of an inverted pyramid shape with its base at the cranial base and the apex at the greater genu of the hyoid bone. Parapharyngeal space masses usually enlarge medially and in a downward direction because of the

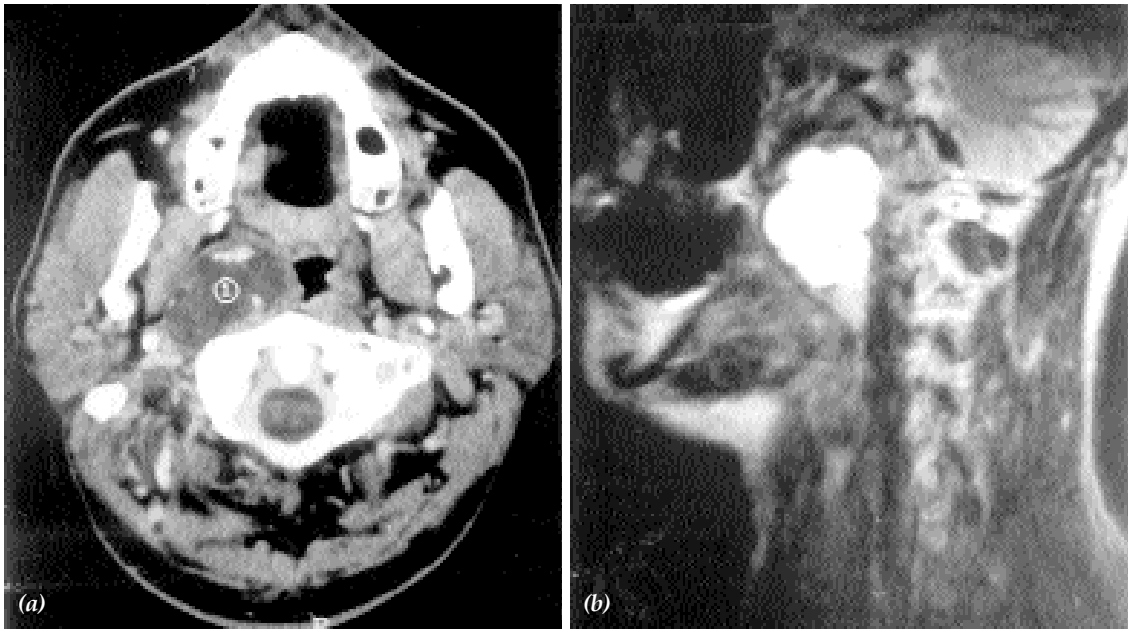

Fig. 1 - ***(a)*** *Axial computed tomography scan showing a mass with calcified edge in the right parapharyngeal space.* ***(b)*** *Magnetic resonance view in the sagittal plane showing an intense enhancement of the parapharyngeal mass.*

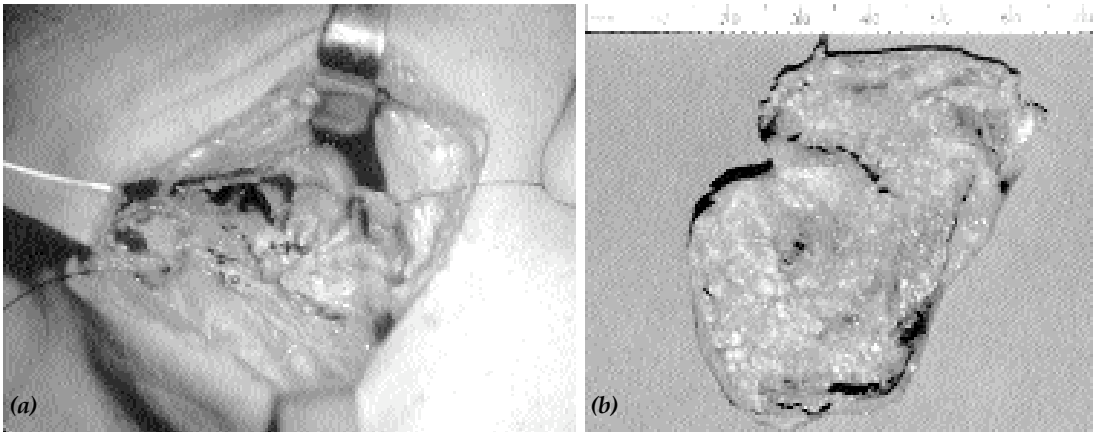

Fig. 2 - *(a) After suspension of the major vessels, the posterior belly of the digastric muscle and stylomandibular ligament were separated to facilitate access to the parapharyngeal space. (b) The mass was heterogeneous in consistency and showed cystic and solid areas.*

bony walls surrounding the base, posterior, and lateral aspects. Hence, the most common physical findings are peritonsillary and upper neck masses lying below the mandibular angle.[12]

The parapharyngeal space contains lymphatic tissues draining the nasal cavities, paranasal sinuses, nasopharynx, and a portion of the thyroid gland.[3,12,13] Lymphatic drainage of the thyroid gland follows four routes: superiorly to the prelaryngeal lymph nodes; superolaterally to the upper deep cervical lymph nodes; inferiorly to pretracheal, paratracheal, and upper mediastinal lymph nodes; and inferolaterally to supraclavicular and jugulo-subclavian lymph nodes.[6] There is also a connection from the thyroid gland to the lateral retropharyngeal nodes.[11] There are collecting lymph channels arising from the posterior aspect of the superior pole of the thyroid lobe and terminating in a retropharyngeal node. A connection was also identified between the retropharyngeal and parapharyngeal regions, just posterior to the fascia of the superior constrictor muscle.[11]

Thyroid carcinoma with metastasis to the parapharyngeal space is an extremely rare condition. The connection between the retropharyngeal and parapharyngeal regions may provide access for t h y roid c a rcinomas to the parapharyngeal space. Our literature search revealed seven cases of thyroid gland carcinoma with parapharyngeal space involvement, four of which were papillary carcinoma,[4,6,10,11] two were follicular carcinoma[7,9] and one was medullary carcinoma.[8]

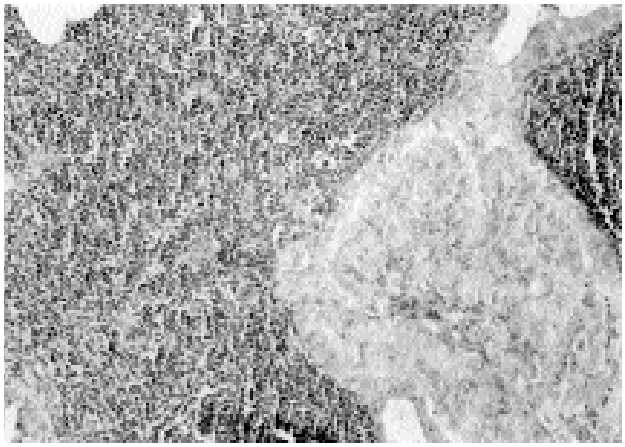

Fig. 3 - *Metastatic papillary carcinoma cells in the lymph node with ample cytoplasm (H-E x 50).*

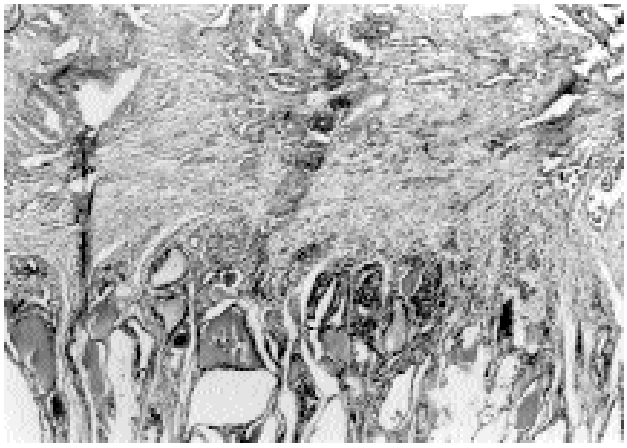

Fig. 4 - *Normal thyroid follicles (lower field) and neoplastic growth with papillary features (upper left) (H-E x 50).*

This report corroborates the presence of a pathway between the parapharyngeal lymph nodes and the jugular chain. Localization of the primary tumor in the upper pole of the thyroid gland may pose a potential risk for ipsilateral parapharyngeal space metastasis. Therefore, differential diagnosis of parapharyngeal masses should include metastatic thyroid carcinomas.

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