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Case Report

Co-occurrence of follicular thyroid carcinoma and Warthin's tumor of the parotid gland: a rare case report

Arnab Adak[1], Anannya Tripathy[2], Rajdeep Guha[2], Sukanya Naskar[2]*

[1]Department of Surgical Oncology, Chittaranjan National Cancer Institute, New Town, Kolkata, India
[2]Department of Head & Neck Surgical Oncology, Chittaranjan National Cancer Institute, New Town, Kolkata, India

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***Correspondence:**
Dr. Sukanya Naskar,
E-mail: sukanya.nskr@gmail.com

ABSTRACT

Synchronous thyroid and parotid tumors are rarely noted in literature. There are case reports with thyroid carcinoma with parotid metastasis. In this article we present a rare case of follicular thyroid carcinoma in a 62-year-old gentleman with a synchronous right sided Warthin's tumor. Synchronous follicular thyroid carcinoma with a Warthin's salivary tumor is a unique presentation and has not been reported in literature before to the best of our knowledge. The surgical management of such cases, particularly in a single sitting may prove challenging in terms of incision planning and execution and head and neck surgeons should be prepared for versatile surgical planning and postoperative care.

Keywords: Synchronous primary tumors, Head and neck tumors, Thyroid and parotid tumors, Follicular thyroid carcinoma, Warthin's tumor, Salivary neoplasm, Thyroidectomy

INTRODUCTION

Synchronous thyroid and parotid malignancy are rare. There are few case reports with thyroid and parotid swelling noted in literature. Here we report a unique case of synchronous primary head and neck tumors with a follicular thyroid carcinoma with right sided Warthin's tumor of parotid gland in a 62-years-old gentleman. It is not entirely uncommon in a head and neck practice to encounter synchronous or metachronous thyroid tumors with other malignant tumors such as carcinoma of breast and malignant melanoma, as well as coexistence of different histological varieties of differentiated thyroid cancers within the same thyroid resection specimen. (i.e., Follicular thyroid carcinoma and Papillary thyroid carcinoma or Medullary thyroid carcinoma with Papillary thyroid carcinoma).[1,2] Metastatic diseases to thyroid and/or parotid glands may be present, mainly from adenocarcinomas, renal cell carcinomas, squamous cell carcinoma, mucosal melanomas etc.[3-5] However, there is no definite proven association between concurrent thyroid and salivary gland tumors. The genetic makeup of mutations leading to the different tumors also vary greatly; with thyroid neoplasms being associated with mutations in the BRAF, RAS, RET AND TP53 GENES and RET/PTC, PAX8/PPAR- γ fusions among others, whereas parotid and other salivary gland neoplasm are found in association with TP53, RAS (particularly HRAS), PIK3CA, NOTCH 1/2 and genes in the ERBB family. Notably, RAS and TP53 alterations are common in tumors of both locations.[6,7] Whereas the relationship between Warthin's tumor and smoking is well established, interestingly, recent studies have shown a negative association of smoking with thyroid cancers with the protective effect of smoking being limited to differentiated thyroid cancers.[8,9]

CASE REPORT

A 62-year-old gentleman presented with swelling in the midline neck with right sided swelling in the parotid region (Figure 1). Ultrasonography of neck confirmed the

clinical finding to be synchronous thyroid and parotid lesion. USG guided FNAC done from both the swelling. FNAC of midline swelling was suggestive of thyroid malignancy and that of parotid was suggestive of benign parotid swelling.

Figure 1: Clinical presentation of the synchronous tumors.

Figure 2: Incision planning-modification of the modified blair incision.

Figure 3: Resection specimens.

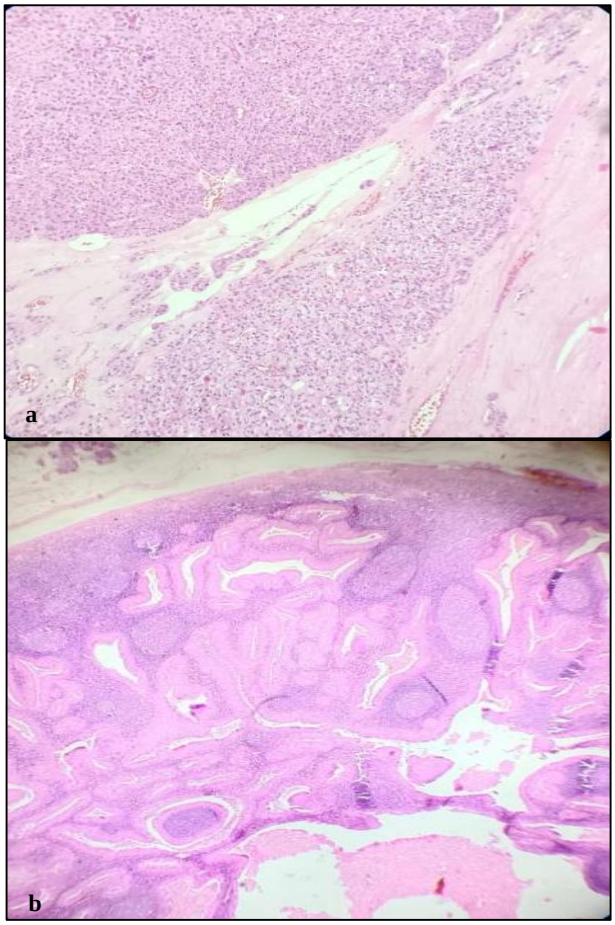

Figure 4: (a) Final Histopathology-Thyroid gland (Haematoxylin and Eosin stain, 40X); (b) final histopathology-parotid gland (haematoxylin and eosin stain, 40X).

Diagnostic dilemma

Metastasis was ruled out by proper staging. Initially it was thought to be an isolated metastasis from thyroid gland to right parotid tumor. As some case reports were noted in the literature, we had this diagnostic dilemma. However fine needle aspiration from both the glands was done, which revealed two separate tumors arising synchronously.

Surgical method

After the initial work up surgery was planned. Right conservative parotidectomy with total thyroidectomy was planned according to the initial diagnosis and work up. Plan of incision was challenging. Right sided modified Blair incision for parotid with a combination of Kocher's incision for thyroid gland might have left the intermediate skin at risk for flap necrosis. A modification of the Modified Blair incision was done. The lower extent of the incision was made 2 cm below the standard incision and extended to merge with Kochers incision (Figure 2). Flaps were raised to expose both the glands together. Total thyroidectomy was done following the standard

steps. It was followed by superficial parotidectomy preserving the facial nerve. Specimen were taken out (Figure 3). Specimen were sent for final histopathology for confirmation (Figure 4 a & b).

DISCUSSION

Co-occurrence of thyroid and parotid tumors are not common. However, several case reports are noted in literature, few of which are summarized herein. A carcinoma of the left breast (hormone strongly positive, her 2 negative) presented with a metachronous metastasis to parotid and thyroid.[10] Taha et al, mentioned a list of second primaries in individuals exposed to the Chernobyl disaster. Second primary tumors of the gastrointestinal tract were noted in 146 cases, genitourinary system in 139 cases and were seen to be most prevalent among men.[11]

Abdullah et al, mentioned a case of triple primary consisting of parathyroid carcinoma, papillary thyroid carcinoma and Warthin's tumor. The journal reported a 59-years-old male who presented with a neck swelling for 3 months. Sonography of neck was done to detect a thyroid nodule on left side with suspicious lymph nodes in neck. A parotid gland mass was also noted. A fine-needle aspiration was done from the left parotid mass showed malignancy with metastasis to the left cervical group lymph node. The patient underwent a total thyroidectomy, left central and lateral cervical lymph node dissection. Superficial parotidectomy was also performed during that time. A histopathological examination revealed three different pathologies: Papillary thyroid microcarcinoma, Parathyroid carcinoma and Warthin's tumor.[12]

Isolated parotid metastasis from thyroid gland is reported by Zhi-Wong-Wu et al, in three patients. First, a 61-years-old man presented with papillary thyroid carcinoma in the right thyroid lobe with cervical nodal metastasis. A right hemithyroidectomy with regional lymph nodal dissection was done. The patient had two local recurrences, one in the left thyroid lobe and other in the isthmus during the 12th and the 17th year of follow up. A slow-growing, painful right parotid mass developed after 28 years, which proved to be a metastasis from the thyroid cancer. Second, a 71-years-old woman presented with follicular thyroid carcinoma in the left thyroid lobe without any nodal metastasis for which surgery was done. She presented with parotid malignancy after 25 years.

Third, a 54-years-old man presented with medullary thyroid carcinoma in the left lobe of thyroid gland with regional lymph nodal metastasis. He was treated with a left thyroidectomy and an ipsilateral cervical lymph node dissection. He developed a second primary of parotid gland after 4 years.[13] Sharma et al, described a series of second primary in the salivary glands in thyroid cancer patients. The author mentioned an increasing trend of second primary malignancies with thyroid cancer. All cases of well differentiated thyroid cancers diagnosed between 1973-2014 were studied. Approximately 90% of thyroid cancers are well-differentiated carcinoma consisting of both the papillary and follicular components. The 10-years survival was more than 90% after adequate treatment. The incidence of second primary malignancy in thyroid cancer is estimated to be 7-8% in several studies. There was also no significant difference between primary salivary gland malignancies and secondary salivary gland malignancies.

The parotid gland was the most commonly involved in both papillary as well as follicular thyodi cancer patients. Neck irradiation was a known risk factor among patients to develop salivary gland malignancies. The increased risk of secondary salivary gland malignancies was seen earliest at 6 months and latest by 10 years from the time of diagnosis of thyroid cancer.[14] There were many similar case reports and review articles noted. Synchronous Warthin's tumor with papillary thyroid carcinoma was reported but no case report of Warthins's tumor and follicular carcinoma thyroid were found.

CONCLUSION

Co-occurrence of a thyroid malignancy and parotid tumor is rare. This is a unique case of follicular carcinoma of thyroid with Warthin's tumor of right sided parotid gland. Thus, it creates awareness to the head and neck surgeons, endocrinologists and multidisciplinary teams to consider the possibilities during planning of the treatment. Surgical incision planning in case of synchronous primary is a challenge. Modification of the standard Modified Blair incision helps to expose both the glands together and allow surgeons to do adequate surgery.

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