

Papillary Carcinoma of Thyroid with Nasal Cavity Metastases: A Case Report

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What's Known

- The incidence of paranasal sinus (PNS) metastasis is fairly uncommon in case of thyroid carcinoma and only a handful of reported cases are presented.

What's New

- To the best of our knowledge, no case of metastatic PTC to nasal cavity has been reported.
- We are reporting the first case of papillary carcinoma of thyroid with nasal cavity metastases in a 55-year-old female.

Abstract

Papillary thyroid carcinoma (PTC) is one of the most commonly diagnosed types of differentiated carcinoma of the thyroid. It is stated that lung is the most common site of metastasis followed by bone. The incidence of paranasal sinus (PNS) metastasis is fairly uncommon in case of thyroid carcinoma. To the best of our knowledge, no case of metastatic PTC to nasal cavity has been reported. In this case report, we present the first case of papillary carcinoma of the thyroid with nasal cavity metastases in a 55-year-old female. The patient underwent surgical treatment and the mass was completely removed and sent for pathology. The pathology report revealed that it was metastatic papillary cell carcinoma. Surgical approach is usually difficult in view of the cosmetic and functional concerns, but may be considered in selected cases. As described herein, this rare type of metastasis was successfully removed and the patient was symptoms free after 1-year follow-up.

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Introduction

Annual incidence of differentiated carcinoma of the thyroid (DCT) varies from 0.5 to 10 cases per 100,000 people.¹ One of the most common diagnosed types of DCT is papillary thyroid carcinoma (PTC).² PTC, a well-differentiated malignant tumor, represents 1% of all malignancies and about 70-80% of all thyroid cancer developed from the thyroid follicular cells.¹ Although its incidence is rising, the overall survival rate in patients under 40 years old is 95% and in older patients is 75%.³ Distant metastases are seen in 7-15% of patients with DCT.² It is stated that the most common site of metastasis is lung followed by bone.² The incidence of metastasis to paranasal sinus (paranasal sinus metastasis (PNS)) is fairly uncommon in thyroid carcinoma cases and only a handful of reported cases are presented.^{2,3} To the best of our knowledge, no case of metastatic PTC to the nasal cavity has been reported. In this case report, we present the first case of papillary thyroid carcinoma with nasal cavity metastases in a 55-year-old female.

Case Presentation

A 55-year-old female with one-sided nasal obstruction and rhinorrhea in her nose for more than five months referred to our center in the ENT department of Khalili Hospital (Shiraz, Iran) in 2014. She was a known case of papillary thyroid carcinoma

with metastases to the pelvic and lung. She had a history of severe bone pain and haemoptysis (more than a year) and was a candidate for total laryngectomy and thyroidectomy due to her advanced thyroid cancer. However, due to the dissatisfaction of her visitors, she only underwent total thyroidectomy. Examination of the patient revealed an ulcer mass covered with crust in the anterior and inferior part of the right-sided nasal cavity.

Patient's PNS CT with contrast revealed an irregular border mild enhancing tumoral solid mass measuring 30×30 mm at the anteroinferior of the right nasal cavity without calcification or lytic osseous lesion at adjacent bone and PNS were clear (figure 1). Based on the roll out of vascular lesion, a biopsy was done. The biopsy result indicated high suspicious to carcinoma. Thus, the patient was scheduled for mass excision with functional endoscopic sinus surgery (FESS). After a general and local anesthesia, bilateral endoscopic sinus was done. The left nasal cavity was normal for mucosal lesion, but a mass measuring approximately 3×3 cm was seen in the anteroinferior part of the right nasal cavity that involved uncinate posteriorly and inferior turbinate inferiorly. The mass was removed with inferior turbinate. Right uncinectomy, right antrostomy and right anterior ethmoidectomy were done. Right maxillary sinus was viewed with endoscope and showed no mass involvement. Septum showed neither mass nor involvement. The mass was sent for pathology and the report revealed metastatic papillary cell carcinoma (figures 2-4). The patient was symptoms free at 6-month and 1-year follow-up after the surgery.

Written informed consent was obtained from the patient for the publication of this case report and any accompanying images according to ethical consideration of Shiraz University of Medical Sciences.

Discussion

It is reported that well-differentiated carcinomas are classified as 80-85% papillary, 10-15% follicular, and 3-5% Hurthle-cell carcinoma.² The principal cause of death in well-differentiated thyroid carcinoma cases is distant metastasis.⁴ Distant metastasis is reported in about 10% of papillary carcinoma cases and 25% of follicular carcinoma cases. It is important to note that, at the time of diagnosis, about 50% of patients having such metastasis should be treated aggressively.⁴ The prognosis of these patients is poor and over 50% of patients are likely to die within 5 years.⁴

It is shown that clinical evaluation and histopathological assessment are certainly

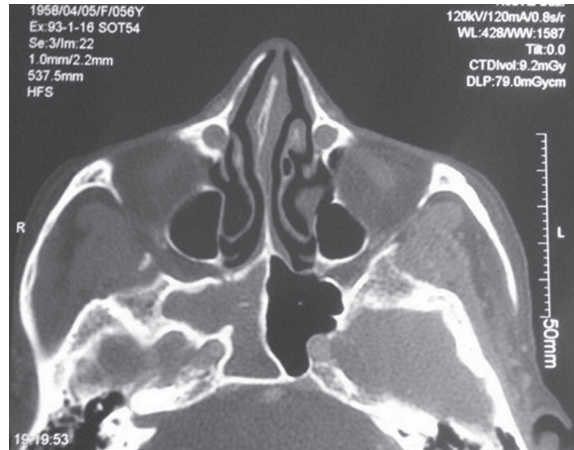


Figure 1: CT-scan showing a tumoral solid mass at anteroinferior of the right nasal cavity.

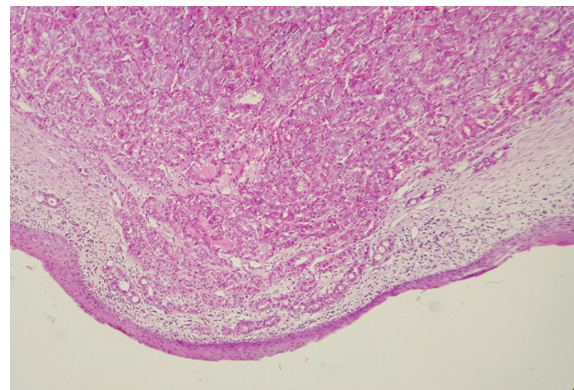


Figure 2: Sheet of tumor cells extending beneath the epithelium (H&E stain, 100×).

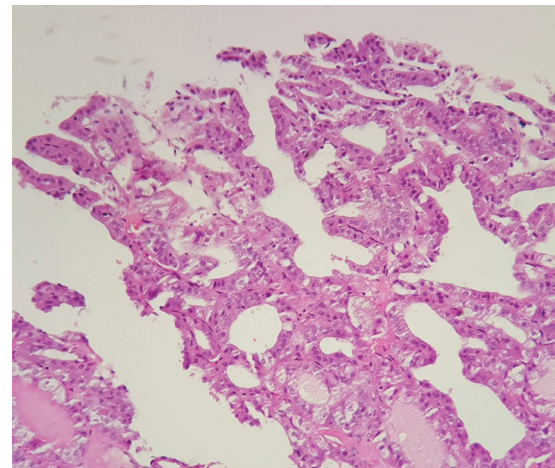


Figure 3: Papillary and glandular configuration of tumor cells (H&E stain, 250×).

important in validating the diagnosis of metastasis and guiding the therapy.⁵ It is stated that the most common site of metastases is lung (65-70%) followed by bone, as in our case.² Other less frequent metastatic sites are the brain, liver, and skin.² It is declared that based on angiogenesis and/or lymphangiogenesis induction of tumor

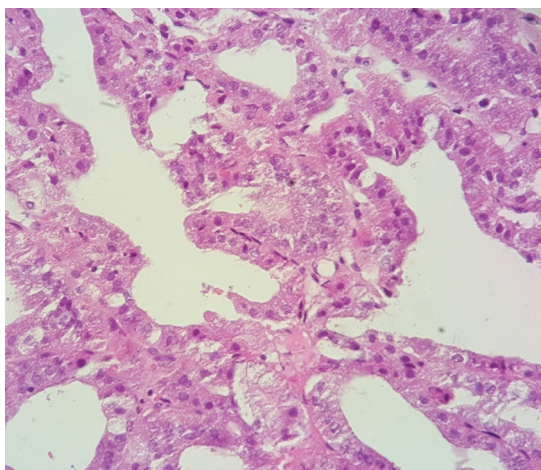


Figure 4: Higher magnification of figure 2 that shows true papilla with fibrovascular core (H&E stain, 400×).

cells, the metastases are different. Cancer cells invade the lymphatic system to spread to regional lymph through the tumor lymphangiogenesis or invasion of pre-existing lymphatics at the tumor periphery. Nakamura et al. stated that NO may play an important role in the lymph node metastasis of human PTC via VEGF-D induction.⁶ The nose, palate, nasopharynx and alveolar ridge are other likely sites of metastases. In the majority of cases, the primary site of tumor was in the kidney (55%) followed by bronchus and urogenital ridge (11%), breast (10%), gastrointestinal tract (6%), and thyroid (3%).⁴ Thyroid primaries contributed in only 3 cases.² Krishnamurthy et al. recommended that the head and neck surgeons maintain a high index of suspicion in the examination of patients with a previous history of thyroidectomy regarding the possibility of metastatic spread.⁴ It is also stated that in PNS metastases, pertinent symptoms such as visual disturbances, nasal obstruction, facial swelling or bulge, epistaxis, and cranial nerve abnormalities should be investigated and treated rigorously.

Madan et al. in 2013 presented a 45-year-old male with a large mass in the left side of nasal cavity that caused the destruction of the nasal septum and sphenoid wing, erosion of sphenoid and ethmoid sinus, involvement of cavernous sinus and expansion of medial wall of both orbits. The patient underwent radiation therapy. According to their reports, no significant changes were demonstrated in comparison to baseline imaging and patients had stable disease. However, they recommended surgical approach in some cases as considered in our case.²

Verma et al. presented a 65-year-old male as a case of papillary carcinoma thyroid co-existing with oral cavity squamous cell carcinoma.

Positron emission computer tomography (PET-CT) scan was done in this case and it revealed mandible destruction and extension to gingivobuccal sulcus. Their patient underwent surgery as done in our case. Postoperative histopathology showed metastatic squamous cell carcinoma on the left side of the neck and mandible. Papillary carcinoma thyroid was seen in the left lobe of the thyroid. The patient was sent for radionuclide therapy six weeks after surgery. The patient was followed-up every three months and was disease-free as in our case.⁷

In another study, Siddique et al. described a rare case of gingival metastases from papillary thyroid carcinoma in a 71-year-old man. As in our case, they also requested CT-scan and a surgical procedure was done. Their patient underwent radioactive iodine after the surgery, but 8 weeks later he referred to his general medical practitioner with gingival swelling which was rapidly growing. They suggested palliative chemotherapy for eradicating the nature of this disease.⁸

As disused, the metastases of PTC are very rare, especially to the nasal cavity. It seems that surgical approach is one of the best methods to manage and eradicate this type of tumor.

Conclusion

To the best of our knowledge, we have presented the first report of PTC in the nasal cavity. Surgical approach is usually difficult in such cases but, as in our case, it may be considered in selected cases.

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Conflict of Interest: None declared.

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