

Metastases of Follicular Thyroid Carcinoma to the Nasal Cavity and Paranasal Sinus: A Rare Case Report

Zhi Xiong Chong¹, Rosdan Salim²

¹School of Medical Sciences, Universiti Sains Malaysia Health Campus, Kelantan, Malaysia

²Department of Otorhinolaryngology, School of Medical Sciences, Universiti Sains Malaysia Health Campus, Kelantan, Malaysia

ABSTRACT

Follicular thyroid carcinoma is the second most common thyroid cancer after papillary carcinoma. However, follicular thyroid carcinoma ranks first in producing distant metastases among thyroid cancers. Distant metastases at the time of diagnosis are reported in 11-20% of the patients. The usual sites of metastases are lung and bone. We present an unusual case of metastases of

follicular thyroid carcinoma to the nasal cavity and paranasal sinuses in a 56-year-old Malay woman who had undergone total thyroidectomy and radioiodine ablation. She presented with recurrent epistaxis, nasal blockage and progressive worsening of vision. She was offered palliative radiotherapy to the metastatic lesions but she declined.

Keywords: Follicular thyroid carcinoma; Metastases; Nasal cavity; Paranasal sinuses; Total thyroidectomy; Radiotherapy

INTRODUCTION

Thyroid cancer can be divided into 4 subtypes; papillary, follicular, medullary and anaplastic carcinomas. Papillary and follicular carcinomas are grouped as differentiated thyroid cancer (DTC) [1]. Follicular thyroid carcinoma is the second most common thyroid cancer after papillary carcinoma but it ranks first in producing distant metastases among all types of thyroid cancers [1]. Distant metastases at the time of diagnosis are reported in 11-20% of the patients. The commonest site of metastases is lung followed by bone [1, 2]. Other distant metastases are rare or relatively rare and involve the brain, breast, liver, kidney, muscle, and skin [1, 3]. Metastases of follicular thyroid carcinoma to paranasal sinus and nasal cavity are extremely rare, with only 11 cases reported in the English and European literature [3]. Due to the extremely low incidence, metastases of the thyroid cancer to the paranasal sinus and nasal cavity is usually not taken into clinical consideration, resulting in poor outcome and prognosis for the patient [2, 3]. Our aim is to draw attention of the clinicians to patterns of rare metastases from differentiated thyroid carcinoma (DTC). The current proposed management for metastases of follicular thyroid carcinoma to the paranasal and nasal regions is

mainly palliative radiotherapy and which has limited role in improving the mortality and morbidity [3].

CASE REPORT

A 56-year-old Malay woman presented to the University Hospital of Univeristi Sains Malaysia (HUSM) with recurrent epistaxis, nasal blockage and progressive blurring of vision for 6 months. Patient had been diagnosed with thyroid cancer 2 years ago and had underwent total thyroidectomy a year later at another hospital. After the operation, she was scheduled for 10 cycles of radioactive ablation. She started to develop all these symptoms when she reached the sixth cycle of the radiotherapy. Due to different hospital policies, the details of her radiotherapy records at another hospital could not be obtained. Patient denied history of trauma to the head or nose or bleeding tendencies. She did complain of progressively reduced smell and taste sensations for few months prior to her current admission. She had no family history of thyroid cancer or bleeding disorder. On physical examination, patient was conscious but had cachexia. She was clinically euthyroid. A massive haemorrhaging mass completely occupying the right nasal cavity was noted on

Conflict of Interest: None declared

This article has been peer reviewed.

Article Submitted on: 20th September 2014

Article Accepted on: 5th January 2015

Funding Sources: None declared

Correspondence to: Zhi Xiong Chong

Address: School of Medical Sciences, Universiti Sains Malaysia Health Campus, Kelantan, Malaysia

Email: zhixiong17c@yahoo.com, zhixiong17c@gmail.com

Cite this Article: Chong ZX, Salim R. Metastases of follicular thyroid carcinoma to the nasal cavity and paranasal sinus: a rare case report. *J Pioneer Med Sci* 2015; 5(2):51-53

anterior rhinoscopy. The nasal septum had deviated to the left side and the left nasal passage was narrow with a small mass protruding from the nasal cavity. The right nose could not detect smell and cold spatula and Cottle tests were negative for the right nose, suggestive of complete obstruction. The left nose could still detect smell. Endoscope could not be inserted into the right nasal cavity due to complete obliteration of the cavity. Eye assessments revealed non perception of light for right eye and temporal hemianopia of left eye. Neurological assessments, cardio-respiratory and abdomen examinations were otherwise normal. There were no cervical lymphadenopathy or neck masses.

Contrast enhanced computed tomography (CECT) showed a large ill-defined heterogenous contrast enhancing mass occupying the nasal cavity, nasopharynx, ethmoid bone, sphenoid sinus, cavernous sinus and sella. The lesion measured about 7.3 cm x 5.6cm x 6.7cm. Destruction of the nasal bone, bilateral lamina papyracea, cribriform plate and surrounding tissues was present. No enhancing lesion was noted within the brain parenchyma. Gray and white matter was preserved. Histopathological examination (HPE) of the biopsy from the nose mass confirmed the diagnosis of follicular thyroid carcinoma. Her chest radiograph was normal with no evidence of pulmonary metastases. A CT scan of the abdomen was also normal with no liver metastases. In addition, complete blood count, thyroid function tests, liver and kidney function tests were also normal. The patient was counseled intensively and advised palliative radiotherapy. Palliative low dose radiotherapy of about 20-30Gy was planned to give in 5 to 10 fractions. However, patient refused treatment. She was also referred to neuro-ophthalmology, neurosurgery and oncology units for further management but again she declined. She was given daily nasal packing to stop bleeding as recurrent epistaxis might have predisposed her to develop anemia and hypovolemic shock in severe case.

Patient was discharged 3 days later but she did not keep her follow-up appointments. Hospital staff went to her house 1 week later to visit her but found that she has moved to another location and hence, could not be contacted.

DISCUSSION

There are many postulated routes of distant metastases for thyroid cancer and these include direct, hematogenous, and lymphatics spreads.

The exact route through which follicular thyroid carcinoma spreads to the nasal cavity and paranasal sinus has been debated for decades and most literature agrees now that hematogenous and lymphatics routes play a very important role for the metastases to take place [1, 3].

There are two hypotheses to explain metastases of the follicular thyroid carcinoma in this case. First is that the remnant of the micro-satellite of the follicular thyroid carcinoma which had not been completely excised during the previous total thyroidectomy and was not eradicated completely by the post-operative radio-ablation therapy may have metastasized. Second hypothesis is that the metastases might have taken place before the surgery but were not detected at that time.

Most previously reported case studies showed that distant metastases of the follicular thyroid carcinoma should be treated with external radiation when the tumor is hard to resect and in the palliation of bony, spinal and brain metastases [1]. The effectiveness of radiotherapy varies from case to case and depends on whether the tumor cell is responsive to the therapy [2].

Metastases of follicular thyroid carcinoma to the head region usually do not respond well to radiotherapy and carry poor prognosis [1, 3-6]. The role of radiotherapy is limited and mainly palliative [3-5]. One of the hypotheses is that tumor cells, which have infiltrated the head, nasal and paranasal structures, are very difficult to remove and if too high external radiation is applied, the surrounding normal tissues may be injured as well [3]. At the same time, the metastases of the follicular thyroid cancer have a very silent course and by the time distant metastatic lesions become symptomatic, the disease is usually at a very advanced stage and difficult to treat [6, 7].

CONCLUSION

Metastases of the follicular thyroid cancer usually progresses very rapidly. All patients with previous history of thyroid cancer and who present with epistaxis and nasal obstruction should be suspected to have metastases to the nasal and paranasal regions until proven otherwise. The role of radiotherapy in advanced disease is limited and mainly palliative.

REFERENCES

- Schlumberger MJ. Papillary and follicular thyroid carcinoma. *N Eng J Med* 1998; 338:297-306.
- Aggarwal V, Bhargav PR, Mishra A, Agarwal G. Clinico-pathological characteristics and long-term

Figure 1: The presence of large ill-defined heterogenous mass measuring 7.3cm x 5.6cm x 6.7cm is seen, fully occupying the nasal cavity with destruction and deviation of the nasal septum to the left side, local extension and destruction of the paranasal region



outcome in patients with distant metastases from differentiated thyroid carcinoma. *World J Surg* 2007; 31:246–247.

3. Altman KW, Mirza N, Philippe L. Metastatic follicular thyroid carcinoma to the paranasal sinuses: a case report and review. *J Laryngol Otol* 1997; 111:647–51.
4. Brierley J, Sherman E. The role of external beam radiation and targeted therapy in thyroid cancer. *Semin Radiat Oncol* 2012; 22:254–62.
5. Nikitakis NG, Polymeri A, Polymeris A, Sklavounou A. Metastatic papillary thyroid carcinoma to the maxilla: Case report and literature review. *Head Neck Pathol* 2012; 6:216–23.
6. Duque-Fisher CS, Casiano R, Vélez-Hoyos A, Londoño-Bustamente AF. Metastasis to the sinonasal region. *Acta Otorrinolaringol Esp* 2009; 60:428–31.
7. Prescher A, Brors D. Metastases to the paranasal sinuses: case report and review of the literature. *Laryngorhinootologie* 2001; 80:583–94.