

## ***Case Report***

---

# **Discharging ear and facial palsy: Clinical presentation of metastatic follicular carcinoma of thyroid in temporal bone- a case report**

Mostafa Mahfuzul Anwar<sup>1</sup>, Md. Zillur Rahman<sup>2</sup>

### **Abstract**

*Follicular carcinoma of thyroid spreads more through haematogenous route rather than lymphatic route. Distant metastasis usually occurs to lung and bones. In the skull, metastasis usually occurs in occipital bone. Metastasis to temporal bone is a rare event. A 45 years female patient presents with discharging ear and facial palsy which was proved to be a metastatic follicular carcinoma in temporal bone. Total thyroidectomy and excision of secondary in temporal bone were done. After surgery she had radio iodine ablation. She was well when last followed up 6 months after surgery.*

### **Introduction**

Follicular carcinoma of thyroid gland is a type of well differentiated thyroid cancer which show high propensity for blood borne metastases rather than lymphatic spread. This is a relatively slow growing tumour than the tumours of other sites of the body. It bears a favourable prognosis except when present with distant metastasis<sup>1</sup>. Distant metastases occur usually to lungs or bones. Metastatic tumours to the skull are more common from malignancies of lung, breast or prostate than thyroid. In most of the reports of follicular carcinoma metastasizing to the skull,

1. Associate Professor, Otolaryngology – Head & Neck Surgery, Chittagong Medical College, Chittagong, Bangladesh.
2. Associate Professor, Department of Pathology, Chittagong Medical College, Chittagong, Bangladesh.

**Address of Correspondence:** Dr. Mostafa Mahfuzul Anwar, MBBS, FCPS, Associate Professor, Otolaryngology – Head & Neck Surgery, Chittagong Medical College, Chittagong, Bangladesh. E mail: dipro2001@yahoo.com

metastases occurred long after the diagnosis and treatment for primary cancer<sup>2</sup>. There have been only a handful of cases in the literature in which solitary skull metastasis was the presenting feature of an occult follicular carcinoma of thyroid. In the skull metastasis usually occurs in parietal or occipital bone. Metastasis to temporal bone is very rare<sup>3</sup>. Here we report a case of metastatic follicular carcinoma of thyroid in temporal bone presents with discharging ear and facial palsy.

### **Case report**

A 45 years old lady from rural area of Chittagong reported with recurrent painless, mucopurulent and frequently blood stained ear discharge and short of hearing in right ear for the last 2 months. One month later she developed right sided facial weakness and progressive painless swelling behind the same ear. There was no history of cold attack, fever, trauma to the ear, headache or vertigo. She was nondiabetic and nonhypertensive. She consulted some local doctors but there was no improvement. On general examination

her build was average and mildly anaemic. On systemic examination all findings are normal. On local examination of right ear, blood stained mucopurulent discharge was present in external auditory canal. Tympanic membrane was destroyed and there was a red fleshy mass in middle ear which bleeds on touch. There was a round swelling about 3 cm in size over right mastoid process, non tender, fixed and firm in consistency. Lower motor neuron type of facial nerve paralysis was present on right side. Tuning fork tests revealed conductive deafness in right ear. No abnormality was detected in left side. On examination of neck, there was a small, hard and non tender nodule less than 1 cm in size in lower part right lobe of thyroid gland. The patient was totally unaware about this nodule. Cervical lymph nodes were not palpable. In laboratory investigations, her Hb was 11 gm%, TC, DC, urea, creatinine, blood sugar all were within normal limit. X ray chest and ECG were also normal. X ray mastoid Towne's view



**Figure 2:** Right facial palsy.

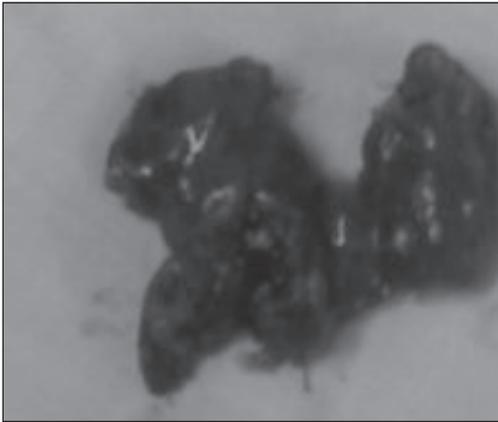


**Figure 1:** Post-auricular swelling.

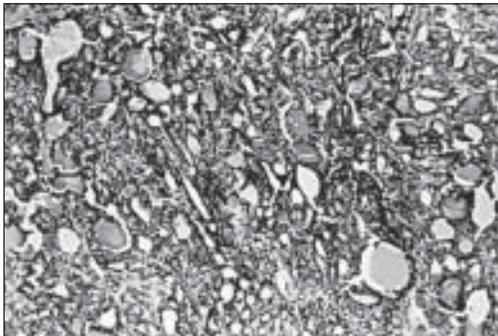


**Figure 3:** Osteolytic lesion in right temporal bone.

showed an oval radiolucent osteolytic lesion in right mastoid bone. On PTA average 50 dB conductive hearing loss was noted in right ear. FNACs from right thyroid nodule and right mastoid swelling showed probable follicular carcinoma of thyroid with metastasis in temporal bone. She underwent total thyroidectomy with exploration of the right mastoid under general anaesthesia in a private hospital of the city. Histopathological findings from both the lesions confirmed the diagnosis. Postoperative recovery was uneventful. After surgery whole body isotope bone scan was done but there was no evidence of any other metastasis. She had radio iodine therapy 6 weeks after surgery. She was found to be well in last follow up 6 months after surgery except having right facial palsy.



**Figure 4:** Solid tumor in right thyroid lobe.



**Figure 5:** Histopathological picture of follicular carcinoma thyroid.

## Discussion

Thyroid cancers account for about 0.5 % of all cancers in men and 1.5 % of all cancers in women<sup>4</sup>. Follicular carcinoma usually presents as a progressively slow growing painless hard swelling in thyroid gland. It is associated with a favourable prognosis when present without distant metastasis. Overall 10 years survival without metastasis is 85%<sup>1</sup>. Distant metastasis in follicular carcinoma can be divided into 2 categories: distant metastasis as the initial presentation and distant metastasis after the initial treatment of carcinoma. Distant metastasis may be detected several years after management of primary tumour<sup>5</sup>. The frequency of individuals diagnosed with follicular carcinoma presenting initially with distant metastasis ranges from 1% to 9%, whereas the incidence of distant metastasis after the initial treatment is between 7% and 23%<sup>1</sup>. Lung and bones are the two most favoured sites of metastases. Less common sites of metastases are brain, liver, skin, kidney, orbit etc<sup>6,7</sup>. Survival rate with lung metastasis is better than bone metastasis<sup>1</sup>. Bone metastases from follicular carcinoma tend to be multiple and more often to the ribs, vertebrae and sternum<sup>2</sup>. Skull bones specially the temporal bone is a rare site for metastases. In skull, metastases are most commonly located in the occipital region as a soft, painless lump. The rate of growth of skull metastases is remarkably variable and it may persist without any serious difficulty for several years<sup>8</sup>. In temporal bone, it may present as pulsatile tumour confusing with glomus jugulare<sup>3</sup>. These lesions are osteolytic on skull X-ray and CT scan and highly vascular on contrast enhancement. Prognosis in case of metastasis is generally poor and the 10 year survival with bone metastases from differentiated thyroid cancers is reported to be 27%<sup>2</sup>. Detection of metastases after treatment of primary thyroid cancer frequently poses difficulty in diagnosis.

Whole body scintigraphy, detection of thyroglobulin mRNA and FNAC from suspected lesion are very much useful in identifying secondaries<sup>1,4,9,10</sup>.

There is no uniform consensus on the management strategy for skull metastasis as the cases were not common and reported by different authors as case reports with their own experience and opinion<sup>11</sup>. Treatment strategy is individualized according to the extension of disease. Most authors are in favour of resection of secondary tumour in skull with total thyroidectomy<sup>1</sup>. The main difficulties in resection are invasion to dura, sinuses and other intra cranial structures. Frequently reconstruction with artificial dura and acrylic is required<sup>2</sup>. Other options of treatment are external beam radiation and radio iodine therapy. Patient of this report had total thyroidectomy and resection of temporal bone metastases. The response to radio iodine ablation after surgery was satisfactory. After 6 months of completing the treatment she was asymptomatic except persistent facial palsy signifying permanent destruction of the facial nerve by the disease process.

### References

1. Sampson E, Brierley JD, Le LW, Rotstein L, Tsang RW. Clinical management and outcome of papillary and follicular (differentiated) thyroid cancer presenting with distant metastasis at diagnosis. *Cancer* 2007; 110(7): 1451-6
2. Shamim MS, Khursheed F, Bari ME, Chisti KN, Enam SA. Follicular thyroid carcinoma presenting as solitary skull metastasis: report of two cases. *J Pak Med Assoc* 2008; 58(10): 575-7
3. Sasaki J, Katoh N, Ishida M, Yoshida H, Mori S, Satoh M, Madarame T, Nakamura R. A case of thyroid carcinoma with temporal bone metastasis. *Gan No Rinsho* 1984; 30(2): 162-6
4. Sherma SI. Thyroid carcinoma. *Lancet* 2003; 361: 501-11
5. Eroglu A, Karaoglanoglu N, Bilen H, Gursan N. follicular thyroid carcinoma: metastasis to sternum 13 years after total thyroidectomy. *Int J Clin Pract* 2006; 60(11): 1506-8
6. Garcia FJC, Torres MJF, Marco PJJ, Selles PF. Unusual metastasis of differentiated thyroid carcinoma. *An Med Interna* 2002; 19(11): 579-82
7. Daumerie C, De Potter P, Godfraind C, Rahier J, Jamar F, Squifflet JP. Orbital metastasis as primary manifestation of thyroid carcinoma. *Thyroid* 2000; 10(2): 189- 92.
8. Kearns DB, Robinson LD, Wright GL, Wickersham JK, Parke RB Jr. skull metastases from follicular thyroid carcinoma. *Arch Otolaryngol Head Neck Surg* 1988; 114(4): 454-6
9. Grammatopoulos D, Elliot Y, Smith SC, Brown I, Grieve RJ, Hillhouse EW, Levine MA, Ringel MD. Measurement of thyroglobulin mRNA in peripheral blood as an adjunctive test for monitoring thyroid cancer. *Mol Pathol* 2003; 56(3): 162-6
10. Kumar PV, Monabati A, Tabei SZ, Ramzy M, Hussein SV, Khajeh F. metastatic follicular carcinoma diagnosed by fine needle aspiration cytology: a report of 3 cases. *Acta Cytol* 2005; 49(2): 177-80
11. Mydlarz WK, Wu J, Aygun N, Olivi A, Carey JP, Westra WH et al. Management consideration for differentiated thyroid carcinoma presenting as a metastasis to the skull base. *Laryngoscope* 2007; 117(7): 1146-52 .