



## CASE STUDY

### BONE METASTASIS FROM AN OCCULT FOLLICULAR THYROID CARCINOMA: A RARE PRESENTATION

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#### ABSTRACT

Follicular thyroid carcinoma is the second most common thyroid cancer after papillary carcinoma. At the time of initial diagnosis, 1-3% of patients with thyroid cancer may have distant metastasis. Follicular thyroid carcinoma may present as an occult primary with bone metastasis and should be considered amongst the potential differential diagnosis; as highlighted in this case.

#### Key words:

Follicular,  
Thyroid,  
Bone Metastasis.

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## INTRODUCTION

Thyroid nodules are a common clinical problem and differentiated thyroid cancer is becoming increasingly prevalent. Thyroid carcinoma includes 5 histological subtypes- Papillary, follicular, medullary, undifferentiated and poorly differentiated. Follicular thyroid carcinoma is the second most common thyroid cancer after papillary carcinoma. It accounts for 10-20% of all thyroid malignancies and is most often seen in patients over 40 years of age (Mazzaferrri, 1981). At the time of initial diagnosis, 1-3% of patients with thyroid cancer may have distant metastasis whereas another 7-23% will develop distant metastasis during disease course (Harness *et al.*, 1974; Ruegamer, 1988; Schlumberger, 1986; Niederle *et al.*, 1986). Yet, occult clinical presentations usually delay the early diagnosis and management of these metastasis. The distant metastasis, especially those involving bone increase the mortality rate, compromise quality of life and shorten patient survival (Ruegamer *et al.*, 1988; Niederle *et al.*, 1986). We, here present the case of a 65 year old male who had metastasis in left pelvic region from an occult primary in the thyroid.

## Case Report

A 65 years old male presented with difficulty in walking and pain in left pelvic region. There was a history of trauma at the same site 40 years back. An MRI left hip was performed which showed the presence of a partially visible lesion in left iliac bone with soft tissue mass around it. No definitive diagnosis could be made on MRI. Therefore, a biopsy was taken from that site. The histopathological examination of the biopsy revealed the presence of metastatic deposits possibly of thyroid origin. Then, thyroid gland of the patient was examined to look for an occult primary. It showed the presence of a nodular swelling measuring 2.5x1.5cm which was firm on palpation and moved with deglutition. A Fine Needle Aspiration Cytology (FNAC) was then done from that swelling. Microscopic examination of the smears showed highly cellular smears with thyroid follicular cells arranged predominantly in microfollicular pattern with no colloid in the background. Hence, a diagnosis of Follicular Neoplasm; Bethesda Category IV was given.

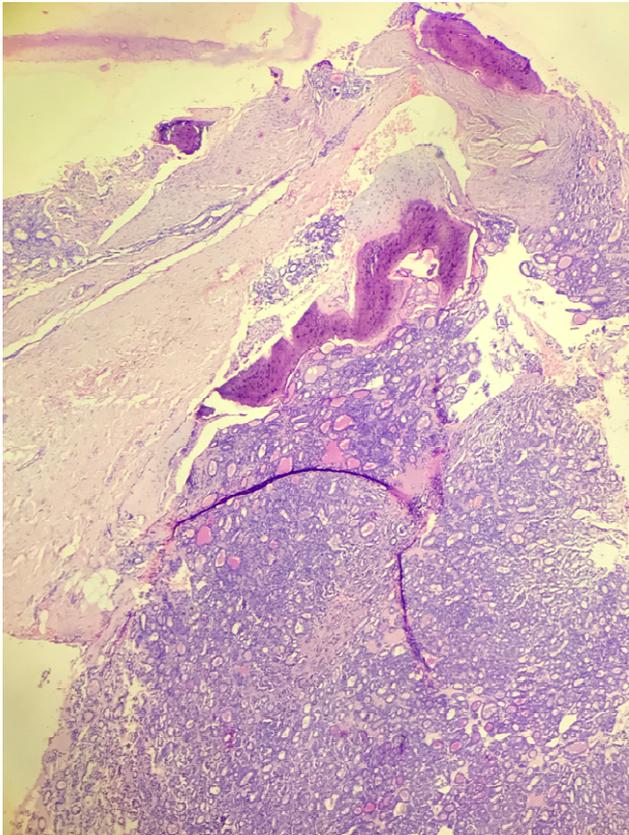
## DISCUSSION

According to WHO classification of thyroid tumors, Follicular thyroid carcinoma is defined by the presence of capsular and/or vascular invasion and by the absence of nuclear features

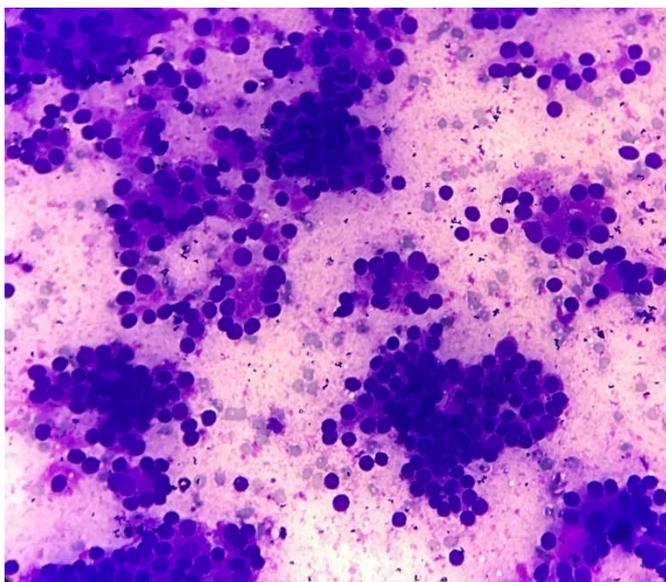
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typical of papillary thyroid carcinoma (DeLellis *et al.*, 2004). Follicular thyroid carcinoma is more likely to metastasize to distant organs rather than to regional lymph nodes because of its tendency to invade blood vessels, thus resulting in hematogenous dissemination (Kim *et al.*, 2014).



**Figure 1. Histological section showing the presence of metastatic deposits of follicular carcinoma to iliac crest (H&E; 100X)**



**Figure 2. Cytological smear showing the presence of Follicular Neoplasm**

Lung and bone are the two most favoured sites of metastasis for follicular carcinoma (Courtney *et al.*, 2012). Bone metastasis from Follicular thyroid carcinoma tend to be multiple and more often to the ribs, vertebra and sternum. (Zettinig *et al.*, 2002).

Bone metastasis from primary tumours of unknown origin are commonly attributed to prostate, breast or lung and in more than 80% of patients, symptoms such as pain, swelling and fracture are evident (Schlumberger, 1998). However, as reflected in the case report, thyroid carcinoma may present as an occult primary with bone metastasis and should be considered amongst the potential differential diagnosis. The presence of distant metastasis is considered one of the most important indicators of unfavourable prognosis in differentiated thyroid carcinomas. The 10 year survival rate with differentiated thyroid carcinoma is 80-95% but it decreases to approximately 40% for patients with distant metastasis (Kuslan *et al.*, 2016). Therefore, early diagnosis and initiation of treatment is must for good prognosis.

### Conclusion

Metastatic thyroid carcinoma should be considered in the differential diagnosis of every patient with bone metastasis.

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