

**Follicular carcinoma of thyroid arising in a multinodular goitre with distant metastasis – A rare case report**

Dr. Vijayalaxmi S Patil<sup>1</sup>, Dr. Savita Shettar<sup>2</sup>, Dr. Yeshaswini Jayakumar<sup>3</sup>

**ABSTRACT**

**Introduction:** Endemic goitre is a major concern in many parts of the world, including Southeast Asia. Goitrous thyroid lesion is postulated as a precursor to thyroid cancer (TC). The incidence of carcinoma in MNG is reported with a percentage that varies from 7% to 17%. Papillary thyroid carcinoma is the more common histological type arising in multinodular goiter (MNG) followed by follicular carcinoma.

**Case presentation:** Here we are presenting a case of follicular carcinoma arising in a long standing multi nodular goiter with soft tissue metastasis in a 55 year old female patient. She presented with a neck swelling and a gluteal swelling since 16 years and 2 months respectively. Fine needle aspiration cytology and histopathological examination of thyroid swelling and the gluteal swelling showed features of follicular carcinoma.

**Conclusion:** Follicular carcinoma of the thyroid is the second common carcinoma arising in a multinodular goiter. It is a slow growing tumor and distant spread may occur commonly to brain, bone and lungs. A soft tissue metastasis is extremely rare. Here we present a rare case of metastatic follicular carcinoma in the gluteal region in a 55 year old female.

**Key words** – Follicular carcinoma, multinodular goitre, metastasis, soft tissue.

<sup>1</sup> Assistant Professor, <sup>2</sup> Associate Professor, <sup>3</sup> Assistant Professor

Department of Pathology, BLDE University's Shri B.M.Patil Medical College, Vijayapur, Karnataka, India

Corresponding author mail: [vspbjp@yahoo.co.in](mailto:vspbjp@yahoo.co.in)

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**INTRODUCTION:**

It has been estimated that the worldwide prevalence of goitre among the general population is about 4%–7%, and the

incidence of malignancy in goitrous thyroid is approximately 10%. Goitrous thyroid is believed to be a precursor to the development of Thyroid carcinoma (TC).<sup>1</sup> TC is a

relatively rare tumour, but it represents the most frequent form of cancer of the endocrine glands. It represents 1% of human neoplasias and its annual incidence is estimated worldwide from 0.5 to 10: 100,000 subjects in the world population. Epidemiologically ascertained risk factors are ionising radiation, the presence of thyroid adenoma and multinodular goiter. The incidence of carcinoma in MNG is reported with a percentage ranging from 7% to 17%.<sup>2</sup> The most common malignancy developing in MNG is papillary carcinoma followed by follicular carcinoma.<sup>1</sup> Follicular carcinoma occurs most commonly in elderly over 50 years of age, is three times more common in females than in males. Distant metastases commonly occur in lungs, bones, skin, brain and adrenal glands and its incidence is between 11-25%. Metastasis of follicular carcinoma to soft tissue is a very rare presentation.<sup>3</sup>

**CASE PRESENTATION:**

A 55 year old female patient presented with swelling in the gluteal region since 2 months and pain since 1 month respectively. She had a history of swelling in the neck since 16 years. She had no symptoms of thyrotoxicosis or hypothyroidism.

On clinical examination-. A multinodular, irregular neck swelling was noted measuring about 18x16cm and it moved with deglutition. The overlying skin was tense with multiple dilated veins on the surface[Figure 1]. The swelling in the gluteal region measured 6x4cm and was soft, mobile and tender [Figure 2]. Fine needle aspiration cytology of gluteal swelling and thyroid swelling was performed. Aspirates of both the swellings showed epithelial cell clusters forming microfollicles/rosettes in a repetitive manner with cytological features suggestive of follicular thyroid carcinoma with metastasis to soft tissue [Figure 3]. Total thyroidectomy and excision of gluteal swelling was performed and the specimens were sent for histopathological examination.

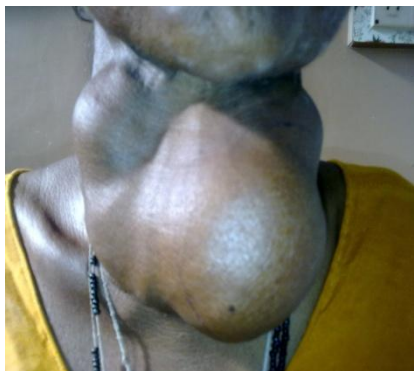


Figure 1: Gross photograph of multinodular neck swelling



Figure 2: Gross photograph of gluteal swelling

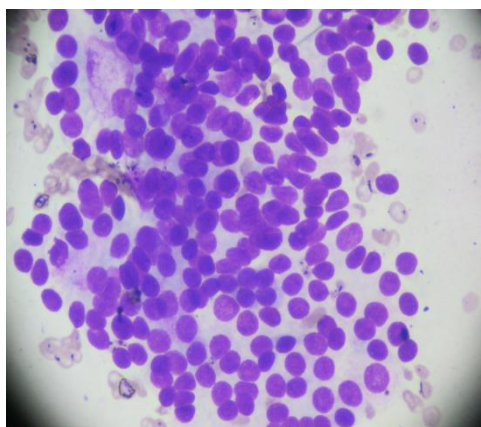


Figure 3: Photomicrograph showing repetitive follicles on cytological aspirate

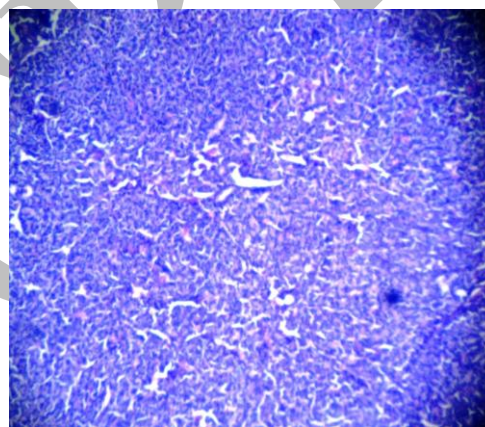


Figure 4: Photomicrograph showing tumor in microfollicles, diffuse sheets

**GROSS:** Thyroidectomy specimen measured 11x8x6cms. External surface – capsulated, multinodular and grey brown in colour. Cut section – nodular, grey white with areas of haemorrhage. Gluteal swelling measured 6x4x2 cms. External surface – congested. Cut section – solid, grey white with areas of hemorrhage.

**MICROSCOPY:** Histopathological examination of thyroidectomy specimen showed tumor tissue comprised of cells arranged in microfollicles, trabecular pattern and also in solid sheets[Figure 4]. Individual cells were small, cuboidal with pale nuclei and scant eosinophilic cytoplasm. Adjacent thyroid tissue showed varying sized follicles filled with colloid, Hurthle cell

change, areas of hemorrhage. The tumor cells showed vascular and capsular invasion. Based on these findings, diagnosis of follicular carcinoma of thyroid was done. Histopathological examination of gluteal swelling also showed features of metastatic follicular carcinoma.

## **DISCUSSION**

Traditionally patients with MNG have been considered less at risk of malignancy than those with single nodule. However, published reports show that the incidence of malignant tumours in patients with single nodule does not differ from those with MNG. MNG is a risk factor for epidemiologically ascertained TC.<sup>2</sup>

Carcinoma of thyroid accounts for approximately 1% of all malignancies. Follicular carcinoma is the second common malignancy of the thyroid only after papillary carcinoma.<sup>3</sup>

Follicular carcinoma accounts for 10-20% of all thyroid cancers. They tend to present in women with peak incidence in 40-50 years. Incidence of follicular carcinoma is increased in areas of dietary iodine deficiency, suggesting that nodular goiter may predispose to the development of the neoplasm.<sup>4</sup>

Nearly 80% of patients with FTC are seen to have a solitary thyroid nodule, and it can also

be seen rarely in patients with endemic goiter. Neoplastic change in an existing goiter is most probably brought about by chronically elevated TSH levels.<sup>3</sup>

It has been reported that the incidence of presentation with distant metastases of follicular carcinoma thyroid ranges from 11% to 25% and is most commonly seen in bones, lungs, brain, liver and adrenal glands in decreasing order of frequency. Distant metastases from follicular carcinoma thyroid to soft tissues is a rare presentation. The incidence of presentation with distant metastasis increases among patients over 45 years of age, and the age at presentation is the single most important prognostic factor in differentiated thyroid cancers. The long term survival in differentiated thyroid cancer in patients presenting initially with distant metastasis exceeds 40%. Aggressiveness of follicular carcinoma varies widely and metastatic disease is the primary cause of death.<sup>3</sup>

Our case presented with thyroid mass of long duration, which was clinically diagnosed as

multinodular goitre and she recently developed gluteal swelling which was considered as lipoma. However FNAC and histopathological examination of thyroid mass and gluteal swelling showed features of follicular carcinoma of thyroid with soft tissue metastasis.

**CONCLUSION:** Multinodularity of goitre should no longer be considered as an indicator of probable benign disease. Incidence of malignant tumours in patients with single nodule does not differ from those with MNG. Herewith we are presenting an unusual case of aggressive FTC arising in a previous case of MNG with soft tissue metastases.

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hospital-based studies in Malaysia and Myanmar. Singapore Med J 2012; 53(3): 159–163.

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