

# Exophytic Follicular Carcinoma of Thyroid: An Unknown Clinical Entity

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## ABSTRACT

**Background:** As per the ICMR registry, thyroid cancer is shown to be an emerging cancer in India, especially in Chennai and Bengaluru. Of the various types of thyroid cancers, follicular thyroid cancer is the second most common well-differentiated thyroid cancer and constitutes about 10% of all thyroid malignancies. It is often diagnosed between the ages of 40 years and 60 years. Females are affected three times more often than males, making it the sixth most common malignancy in females. It is more commonly found among the people living in iodine deficient endemic areas. Appropriate early surgical treatment can reduce the risk of metastasis and recurrence. A neglected goiter can occasionally present with large dimensions and thereby increase the risk of carcinoma.

**Purpose:** To study a unique case of an exophytic thyroid mass that was inadequately managed earlier with nodulectomy. The mass gradually manifested in the form of exophytic follicular thyroid carcinoma.

**Methods:** Our study is a retrospective, explanatory case report of a unique exophytic thyroid follicular carcinoma. The objective of this case report is to highlight the need for a proper assessment and management of any thyroid neck swellings.

**Results:** Our patient had presented with a huge thyroid mass with a history of being inadequately managed earlier. Investigations were carried out that revealed it to be an exophytic thyroid mass with features of invasive follicular carcinoma on histopathological examination. The earlier inadequate surgical treatments had paved the way for the cancer to spread and invade the subcutaneous tissues and the skin.

**Conclusion:** Our case report is unique as although follicular thyroid carcinoma is the second most common cancer of the thyroid gland, its manifestation in the form of an exophytic thyroid mass is unheard. A comprehensive literature search on PUBMED/MEDLINE was carried out for the literature on exophytic follicular thyroid carcinoma, but we were unable to find any literature on the same. The inability of healthcare access, lack of patient's concern, denial of appropriate treatment, and inadequate assessment/treatment of the thyroid swellings (as in this case) can result in an exophytic thyroid mass which could be carcinogenic, e.g., follicular carcinoma as in this case.

**Keywords:** Exophytic thyroid mass, Follicular thyroid carcinoma, Nodulectomy.

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## INTRODUCTION

The National Cancer Institute indicates that thyroid cancer is the most common type of endocrine—related cancer.<sup>1,2</sup> Thyroid cancer represents approximately 3% of all malignancies in the United States.<sup>3</sup> As per the ICMR registry, thyroid cancer is shown to be an emerging cancer in India, especially in Chennai and Bengaluru.<sup>4</sup> Of the various types of thyroid cancers, follicular thyroid cancer is the second most common well-differentiated thyroid cancer and constitutes about 10% of all thyroid malignancies.<sup>3</sup> It is often diagnosed between the ages of 40 years and 60 years. Females are affected three times more often than males, making it the sixth most common malignancy in females.<sup>1-3</sup> Appropriate early surgical treatment can reduce the risk of metastasis and recurrence. It is more commonly found among the people living in iodine deficient areas, a neglected goiter can occasionally present with large dimensions and thereby increases the risk for carcinoma. Thyroid cancers present in a variety of ways from solitary thyroid nodules to an aggressive/invasive tumor. Follicular thyroid cancers are known to be present with local infiltrative properties, but its presentation as an exophytic mass is virtually unheard. We hereby present a case report of a large follicular exophytic carcinoma from the thyroid gland in a middle-aged female patient.

## CASE DESCRIPTION

A 40-year old female patient, resident of Jalna district of Maharashtra, had presented with complaints of a large bosselated

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swelling arising predominantly from the right lobe of the thyroid gland (Figs 1 and 2) since 15 years. The swelling was small in size to begin with. Subsequently, she had twice undergone some inadequate surgical procedures, namely nodulectomy. The swelling reappeared and had grown in size to be bosselated in nature at the time of presentation. She has a family history of goiter in her sister.

On local examination, a large irregular, bosselated swelling of approx. size of 12 × 10 cm was seen arising from the right side of the thyroid gland along with a diffuse swelling from the left lobe. The swelling was soft to firm in consistency over different parts, had engorged dilated veins over the surface, and was multinodular



Fig. 1: Anterior view of the cervical mass



Fig. 2: Lateral view of the cervical mass

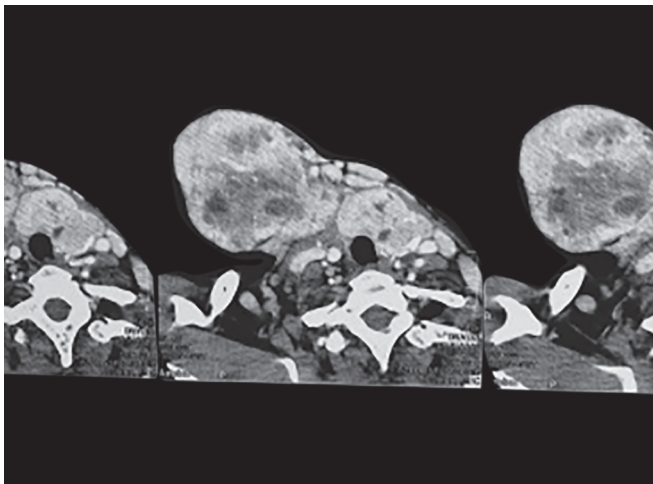


Fig. 3: CECT imaging of the cervical mass



Fig. 4: Skin marking for the incision, taking the oncological margins in consideration

with a largest nodule measuring approx.  $4 \times 4$  cm and smallest measuring approx.  $2 \times 2$  cm. The swelling was infiltrating into the skin and subcutaneous tissue of the neck. Both the carotid arteries, internal jugular veins and the trachea seemed to be free from the mass. A characteristic bruit was audible on auscultation. The remaining head and neck examination was unremarkable in view of malignancy.

In order to assess the local invasiveness of the bosselated mass, CT scan of the neck (Fig. 3) was done, which suggested an exophytic mass arising from the right lobe of the thyroid gland. Fine needle aspiration cytology of the mass was done, which was in favor of the follicular neoplasm of the thyroid gland.

In view of the mass being exophytic, invading the skin and subcutaneous tissue and the surrounding vital structures being free from it, the total thyroidectomy with bilateral selective neck dissection (Figs 4 and 5) was done for the patient. The entire exophytic mass was excised *in toto* along with the skin, preserving the carotid arteries, internal jugular veins, and recurrent laryngeal nerves bilaterally. The thyroid gland was removed separately (Fig. 6) and both the specimens were sent for histopathological examination. The patient tolerated the entire surgery well and her postoperative stay was uneventful. She has being advised to

take lifelong thyroid hormones and calcium supplements. The histopathological study of the specimen is suggestive of follicular carcinoma, exophytic in nature.

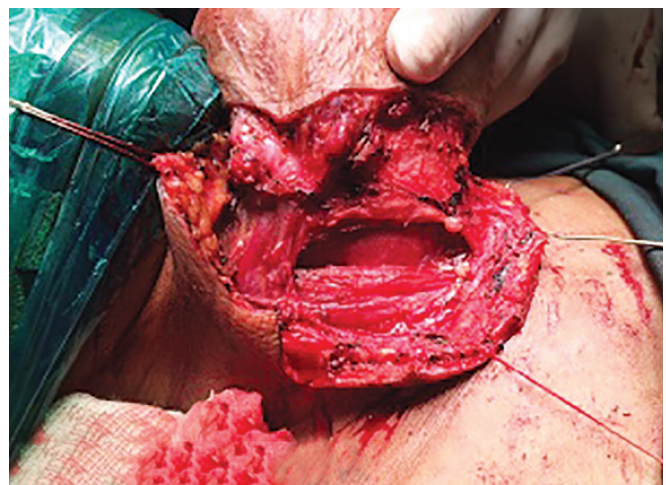


Fig. 5: Intraoperative view, showing the strap muscles and the hollowness due to the large mass





**Fig. 6:** Post excision view of the neck with the strap muscles and the central compartment

## DISCUSSION

In the differential diagnosis of a neck mass, neoplastic, congenital, traumatic and inflammatory lesions, and metabolic disorders should be considered.<sup>5</sup> The diagnosis is made by clinical and radiological evaluations and confirmed by biopsy and histologic evaluation. Fine needle aspiration biopsy (FNA-b) is an excellent tool for evaluating neoplastic neck masses.<sup>6</sup>

Thyroid cancer is the most common endocrine malignancy. Follicular thyroid cancer is the disease of older population compared with papillary cancer, with a peak incidence between 40 and 60 years. It occurs more commonly in women, with a ratio of approximately 3:1.<sup>1-3</sup> It is more commonly found in iodine deficient areas and unlike papillary carcinoma, it is not associated with radiation exposure. It manifests as a painless thyroid mass. It characteristically spreads *via* hematogenous routes, which occurs in 10–15% cases, with the most common site for metastasis being bone and lung.<sup>7</sup> Poor prognostic factors are old age, size of the tumor, extensive capsular or vascular invasion, and follicular carcinoma itself has a poor prognosis, in comparison to the papillary cancer.<sup>1</sup> Our patient hailed from one of the endemic iodine deficient districts of Maharashtra (Jalna), and thereby stood a risk for the development of follicular thyroid cancer.<sup>8</sup>

Follicular thyroid cancer is a locally invasive cancer and is diagnosed by histologically demonstrating abnormal positions of follicular cells, including capsular, vascular, and lymphatic invasion.

Lymph node involvement is unusual in it. It rarely infiltrates the skin. The deep cervical fascia of the neck encases the thyroid gland. It acts as a protective barrier from the invasion of a tumor. We believe that repeated inadequate nodulectomies had violated this barrier and had thereby paved the way for the carcinoma to breach the platysma and subsequently involve the skin and subcutaneous tissues in the neck but sparing the vital structures in the neck.

## CONCLUSION

Follicular thyroid cancer is in rising trend especially in endemic areas for thyroid goiter. The inability of healthcare access, lack of patient's concern, denial of the appropriate treatment, and improper management of the thyroid swelling could result in an exophytic thyroid follicular carcinoma, such as that presented here. All the thyroid swellings should thereby be assessed properly, both histopathologically and radiologically, for any signs of cancer and managed accordingly.

## CONSENT

A written informed consent was obtained from the patient for publication of this paper and accompanying images.

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