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Case Report

Atypical presentation of follicular thyroid carcinoma-A rare case report

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Abstract

Introduction: Follicular thyroid carcinoma (FTC) accounts for 10–15% of thyroid tumors, typically affecting women in their 50s–60s. It spreads hematogenously, often to lungs and bones, with distant metastases in 6–20% of cases. FTC is challenging to diagnose via ultrasound and fine needle aspiration (FNA). This presents a rare case of FTC with cervical lymph node metastasis but no distant spread, diagnosed solely through FNA cytology.

Case Details: A 45-year-old female presented with a neck swelling over two years, came to District hospital Vijayapur, now since few days noticed, sudden enlargement and causing swallowing difficulty.

Examination revealed a 7×5 cm thyroid swelling involving both lobes, with a hard 3×4 cm left cervical lymphadenopathy. Thyroid function tests were normal. Ultrasound showed a hypoechoic, macro-calcified nodule in the left thyroid lobe, multiple colloid nodules in the right lobe, and necrotic left cervical lymph nodes. FNAC of Left lobe and right lobe of Thyroid and left largest lymph node performed in Pathology department.

FNAC of the left thyroid lobe and cervical nodes showed high cellularity, micro and macro follicular clusters, nuclear pleomorphism, high N:C ratio, and scant cytoplasm in a necrotic background. The right lobe revealed similar features with scant colloid. Findings confirmed follicular thyroid carcinoma with lymph node metastasis.

Conclusion: Follicular thyroid carcinoma poses diagnostic challenges due to its similarity to benign lesions. This case highlights the need for a comprehensive approach, integrating clinical, imaging, and cytology, especially with atypical lymph node metastasis, to ensure early diagnosis and optimal surgical management.

Keywords: Follicular thyroid cancers, FNA, Lymph node and Cytology.

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1. Introduction

About 10–15% of all Thyroid tumors are follicular thyroid cancers (FTCs), the second most prevalent kind of differentiated thyroid cancer. It typically manifests in the fifth and sixth decades of life and is more common in women. It frequently invades blood vessels and spreads haematogenously to distant locations, usually the lungs and bones. According to reports, the frequency of distant metastases in FTC ranges from 6 to 20%.[1,2,3,4] Below 45 years of age the incidence lies below 1% of the patients.[5]

Early detection, timely intervention, and regular follow-up play a crucial role in improving prognosis and prolonging survival in FTC patients.[5] About 80% of the patients diagnosed with any subtype of differentiated thyroid carcinoma responds to total thyroidectomy, levothyroxine and radioiodine 131 ablation.[6] However, unlike PTC, FTC often presents with benign-appearing features on ultrasound, leading to potential misdiagnosis as thyroid follicular adenoma (FA), which complicates treatment decisions.[7]

Fine needle aspiration (FNA) also has limited diagnostic accuracy due to the lack of specific cytological markers for FTC. Diagnosis is typically confirmed through Histopathological examination, emphasizing vascular and capsular invasion. However, inadequate sampling or the absence of clear invasion foci can result in missed diagnoses. Consequently, a combination of morphological assessment, Immunohistochemical analysis, and molecular pathology is often necessary for an accurate diagnosis.[8]

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This report presents a case of a patient with a Follicular Thyroid Carcinoma exhibiting cervical lymph node metastasis but no distant metastasis, diagnosed exclusively through fine needle aspiration cytology.

2. Case Report

This study is done according to the CARE Guidelines,[9] in District hospital Vijayapur in March 2025. A 45 years old female presented with a diffuse swelling over neck (**Figure 1**). Since 02 years. Initially, the swelling was left side of neck, measured 1×1 cm, but had progressively increased in size over the past 30 days, reaching 6×4 cm, diffusely involving right side of neck. The swelling had previously been asymptomatic, but the patient recently developed difficulty in swallowing. There was no history of fever, weight loss, or heat intolerance.

On clinical examination, the swelling measured 7×5 cm, involving both lobes of Thyroid, left lobe swelling measuring 4x3 cms, right lobe swelling measuring 3x2 cms, hard in consistency, was mobile with deglutition, and showed no local rise in temperature. Left and right Cervical lymphadenopathy was present, largest left lymph node measuring 3×2 cm, hard in consistency.

A Thyroid function test revealed normal results.

Neck ultrasound demonstrated an enlarged left thyroid lobe measuring 4.8×3.6×4.4 cm, with a hypoechoic nodule measuring 3.8×3.2 cm, completely replacing the thyroid parenchyma and containing macro calcifications. Enlarged right lobe of thyroid measuring 3.0×2.6×2.4 cm, with a hypo echoic nodule measuring 1.6×2.0 cm, with 04 colloid nodules, of each size0.4- 0.5 mm. nodes. Few enlarged left and right cervical lymph nodes (level II) shows central areas of necrosis. No conglomeration noted

Fine Needle Aspiration Cytology (FNAC) was performed in Department of Pathology, district hospital Vijayapur, on Left lobe of Thyroid, Right lobe of Thyroid, and largest left cervical lymph node swelling. The Fine needle aspiration (FNA) from left sided Thyroid lobe swelling yielded blood-mixed material, whereas the right lobe swelling produced pale brownish thin colloid like material from the largest left cervical lymph node also aspirated scant blood-mixed material.

The microscopic findings from the left lobe of Thyroid swelling revealed hyper cellularity with micro & macro follicular, small clusters arrangements, cells are pleomorphic with high N:C ratio, showing 2 to3 nucleoli and nuclear overlapping. The cytoplasm was scant with irregular borders, seen in no colloid and necrotic background (**Figure 2**(a)(b). Microscopic findings from right lobe of Thyroid swelling shows small clusters along with micro follicular arrangement, with marked cellular pleomorphism, high N:C ratio, scant amount of cytoplasm, background shows scant amount of colloid (**Figure 3**). Microscopic findings of the left cervical lymph node demonstrated similar findings to those of the left lobe Thyroid swelling.(**Figure 4**).

Figure 1: Diffuse neck swelling.

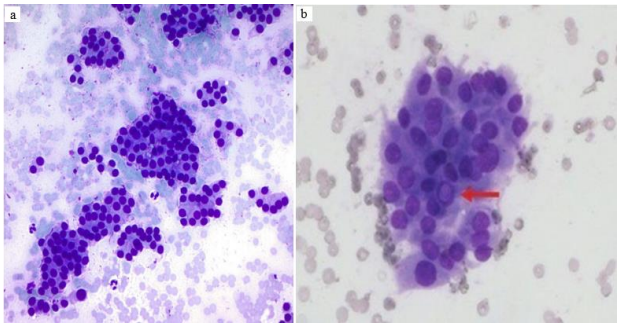

Figure 2: a: May-Grünwald-Giemsa stain (10X) FNAC slides of left lobe of Thyroid, showing, atpical follicular cells arranged in follicles; **b:** May-Grünwald-Giemsa stain (40X), high N:C, prominent nucleoli with no colloid.

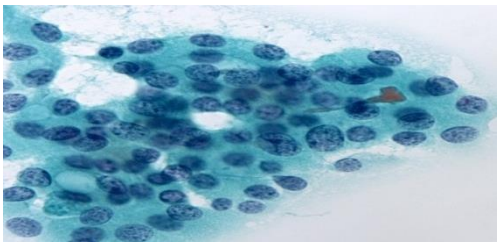

Figure 3: (Papanicolaou 40X), Cytology slides of right lobe of Thyroid, showing atpical follicular cells. High N:C, prominent nucleoli with scant amount of colloid.

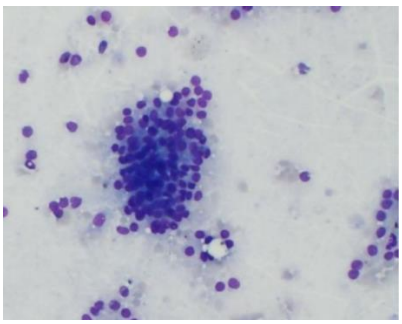

Figure 4: (May-Grünwald-Giemsa stain 40X), Cytology slides of left cervical lymph node showing atpical follicular cells. High N:C, prominent nucleoli.

Based on these findings, the features consistent of Follicular Thyroid carcinoma with lymph node metastasis.

3. Discussion

Follicular Thyroid carcinoma is a well-differentiated thyroid malignancy that predominantly spreads through hematogenous routes rather than lymphatic pathways.[10] Nodal metastases from follicular Thyroid carcinomas can occur in a variety of ways. According to estimates, they range from 4.7 to 30.0%.[11,12,13,14,15,16] Unlike papillary Thyroid carcinoma, FTC lacks distinct nuclear features and specific cytological markers, making its diagnosis challenging.

In this case, the patient had a longstanding left-sided Thyroid swelling with rapid enlargement in the past 30 days, accompanied by the development of a right-sided neck swelling and cervical lymphadenopathy, raising suspicion of malignancy.

Despite normal Thyroid function tests, ultrasound findings of a hypo echoic nodule with complete parenchymal replacement and macro calcifications suggested malignancy.[17]

Staging of follicular Thyroid carcinoma is done into two categories: younger than 45 years of age and older than 45 years of age as a prognostic marker. For less than 45 year age group, if the carcinoma is confined to Thyroid alone with any lymph node involvement and no distant metastasis, it is stage I, which is observed in present case. This method of staging is the tumor, node, metastasis method (TNM method) and is the official method of staging adopted by the American Joint Commission on Cancer.[18]

In our case FNAC from both Thyroid swellings showed high cellularity, micro and macro follicular arrangements, nuclear atypia, and scant cytoplasm with irregular borders, along with an absence of colloid, supporting a neoplastic process. The similarity between the FNAC findings of the left lobe Thyroid swelling and cervical lymph nodes, further indicated metastatic involvement. Consequently, a diagnosis of Follicular Thyroid carcinoma with cervical lymph node metastasis was established.

FTC is often difficult to distinguish from follicular adenoma based solely on cytology, as a definitive diagnosis requires histopathological confirmation of capsular and vascular invasion. However, in this case, the presence of lymph node metastasis along with the acute course of increase in size of the swelling is strongly supported a malignant diagnosis.[19] Although FTC predominantly spreads hematogenously, regional lymph nodes involvement has been documented in a small percentage of cases, as similar to in our case. This case highlights the importance of integrating clinical, radiological, and cytological findings for early diagnosis and appropriate management. Surgical excision followed by histopathological examination remains the gold standard for confirming the diagnosis and determining further treatment, including radioactive iodine therapy if necessary.[20]

4. Conclusion

Follicular thyroid carcinoma remains a diagnostic challenge due to its overlapping features with benign follicular lesions and its reliance on Histopathological confirmation for definitive diagnosis. This case underscores the significance of a comprehensive diagnostic approach, combining clinical evaluation, imaging, and cytological findings, especially in the presence of atypical presentations such as lymph nodes metastasis. Early diagnosis and prompt surgical management are critical for improving patient outcomes.

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6. Conflict of Interest

None.

7. Reference

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