

## Occult Papillary Carcinoma of Thyroid Presenting as Lateral Neck Cyst: A Case Report

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**Abstract:** Cyst of the lateral neck is a common clinical condition frequently diagnosed as branchial cyst in adults. In older individuals they may be secondary to cystic changes in metastatic squamous cell carcinoma of cervical lymph nodes with primary in upper aero digestive tract. Infrequently thyroid malignancies can have metastatic secondaries in lateral neck with cystic changes though primary tumor in such cases is clinically evident. We present a case of cystic swelling in a young female in the lateral neck diagnosed as branchial cyst on repeated fine needle aspiration cytology and found out to be metastasis from occult papillary carcinoma of thyroid gland on histopathological examination. We also discuss management of such clinical presentations.

**Keywords:** Papillary carcinoma, Occult primary, Lateral neck cyst

### INTRODUCTION

Branchial cysts are one of the common cystic masses in young adults presenting in anterior triangle of neck [1]. Management of this condition is straight forward and simple excision will cure the disease. Often clinicians diagnose this condition on clinical grounds together with cytopathology and ultrasound scans. Other cystic lesions are seldom considered if pathological and radiological investigations point towards branchial cyst. Rarely cysts in the lateral neck are metastatic lymphnodes of upper aero digestive tract squamous cell carcinomas which are uncommon in young adults. Fine needle aspiration cytology often differentiates between the two. Very rarely papillary carcinoma of thyroid can present with cystic swelling in the lateral neck. Differentiating them from branchial cysts using fine needle aspiration cytology, computerized tomography (CT), magnetic resonance imaging (MRI) is often difficult especially when primary tumor of the thyroid is not identifiable [2].

### CASE REPORT

35 year old female patient presented with swelling in right side of upper neck of 4 months duration. She gave history of progressive increase in size of swelling. There were no other complaints. On examination diffuse swelling was visible in upper anterior triangle of neck on right side. It was cystic in consistency, non tender and was in the plane deeper to sternomastoid muscle. There was no mobility on

swallowing. Rest of the neck examination was normal. No swelling was noted in the thyroid gland. Examination of oral cavity, oropharynx and larynx showed no significant lesions. Clinical diagnosis of branchial cyst was made considering age of occurrence and patient symptoms. Fine needle aspiration cytology was carried out and was reported as branchial cyst with ultrasound and computerized tomography pointing towards the same. Since location of the cyst was more lateral and superior to common site of occurrence of branchial cyst, ultrasound guided fine needle aspiration cytology was carried out which was again reported as branchial cyst.

Patient underwent excision biopsy of the cyst under general anesthesia. Patient was placed in supine position with neck extended and face turned to left side (Fig.1). Intra operatively bluish cystic lesion was noted in the upper anterior triangle (Fig.2). Part of the cyst was deep to sternomastoid muscle and had attachments to internal jugular vein in its posterior aspect (Fig.3). Carefully it was dissected from internal jugular vein and was excised completely. Post-operative period was uneventful and patient was discharged on 3<sup>rd</sup> post-operative day. Histopathology of the excised cyst was reported as metastatic papillary carcinoma of thyroid gland. Further patient underwent repeated ultrasound guided FNAC of thyroid gland which was inconclusive. Final diagnosis of occult papillary carcinoma of thyroid gland with secondaries in neck was made. Patient

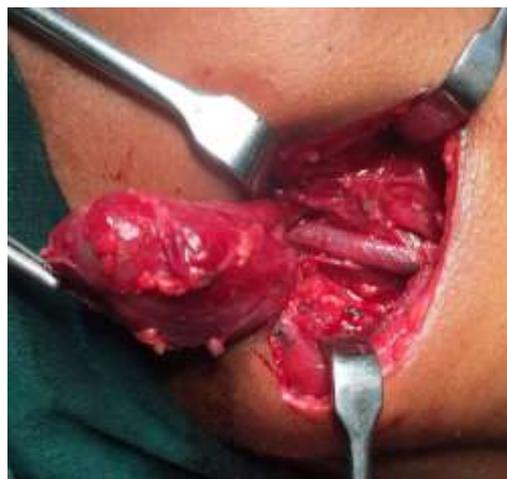
underwent total thyroidectomy with right sided functional neck dissection and central compartment clearance. Biopsy specimen showed papillary carcinoma of thyroid gland involving both lobes of thyroid gland and metastatic secondaries in neck dissection specimen. Patient was further treated with radio iodine ablation and on regular follow-up.



**Fig.1: Patient placed in supine position with neck extended and face turned to left**



**Fig. 2: Bluish colored cyst exposed by retracting sternomastoid laterally**



**Fig. 3: Cyst dissected from internal jugular vein**

### DISCUSSION

Papillary thyroid cancer typically occurs in the middle aged women in the 3rd and 4th decades of life (F: M ratio of 1:1.6-3:1). Papillary carcinoma of thyroid has tendency to metastasize early to cervical lymph nodes [3]. Usually it presents as central neck mass with palpable secondaries in the lateral neck. However it can sometimes have cystic secondaries. Presence of cystic lesion in the lateral neck without central neck mass is a rare occurrence and it is a diagnostic challenge to the clinician. In such situations early differentiation from branchial cyst is important for further management of patients. Only limited literature is available regarding diagnosis and management of such conditions [4-7]. Some studies have shown 11% incidence of papillary carcinoma of thyroid in lateral neck cysts [4]. Clinicians always should think of differential diagnosis while managing lateral neck cysts and should be prepared manage if such conditions are encountered.

Origin of this papillary carcinoma in lateral neck cyst is still controversial especially when primary tumor in the thyroid is not identifiable. Some authors even suggest malignant transformation of ectopic thyroid tissue. Most of the authors think that it is a metastatic spread from occult thyroid papillary carcinoma to regional lymph node with necrosis and liquefaction [9, 10].

Fine needle aspiration cytology is not very sensitive in diagnosing lateral cystic masses with its false negative results ranging from 50-67% [8]. Ultrasound and CT are not much of use when FNAC points towards cystic masses other than papillary carcinoma.

Ultrasound scan shows cystic lesions with irregular thick wall and solid echogenic components adhering to the wall. Usually becomes difficult to differentiate between the cystic metastasis of PTC and branchial cyst depending on ultrasonography [11, 12].

Though ultrasound scan is the best modality for delineating the tumor within the thyroid, CT scan and magnetic resonance imaging (MRI) are better modalities once the tumor has breached the capsule [8].

Excision biopsy is essential when all the investigations points towards lesions other than papillary carcinoma [8]. Sometimes typical bluish to black color of the cyst during surgery can point towards papillary carcinoma and surgeon can ask for frozen section of the lesion. If found positive for papillary carcinoma surgery can be extended to a total thyroidectomy with appropriate neck dissection.

If diagnosis is not made during the initial surgical procedure patient can be taken up for curative surgery soon after histopathological confirmation of papillary carcinoma in excised cyst. Surgery should include total thyroidectomy with clearance of jugular as well as central compartment nodes. Post operatively patient should undergo radio isotope scanning to look for any remnants. Some patients may require radio iodine ablation therapy and long term thyroid suppression with high dose of levothyroxine. It is important that patient comes for regular follow up after surgery so that early diagnosis of any recurrence can be identified.

## CONCLUSION

Clinician should always have high index of suspicion when managing cases of lateral neck cysts especially when they occur in unusual sites. Early diagnosis and prompt management of these lesions is essential for good outcome in these patients. Clinician should be prepared for radical removal of thyroid glands with clearance of lymph nodes even if primary lesion in the thyroid could not be established.

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