

Papillary Thyroid Carcinoma as a Lateral Neck Cyst lump

A.H.M.G.B. Abeysinghea¹, H.K Jayasooriya¹, A.H.M.C.D. Abeysinghe²

¹Department of Surgery, Faculty of Medicine, Wayamba University of Sri Lanka.

²Faculty of Medicine Rajarata University of Sri Lanka Anuradapura.

Abstract

Introduction: Papillary thyroid carcinoma (PTC) accounts for 80% of all thyroid malignancies. It typically manifests as a slow-growing, painless thyroid mass or a solitary nodule in the neck. However, in certain instances, PTC may present as a cystic mass in the neck without an accompanying thyroid nodule. This atypical presentation can mimic benign conditions, leading to potential delays in both diagnosis and appropriate management.

Case Report: We present a case in which the patient initially exhibited a cystic lesion in the neck, leading to an initial diagnosis of benign pathology. It was only after surgical excision of the lesion that the final diagnosis of PTC was established, uncovering the malignancy.

Conclusion: PTC may, on occasion, present as a cystic neck mass, a presentation more often associated with benign conditions. This case underscores the necessity of maintaining a high degree of clinical suspicion when evaluating patients with a solitary cystic mass in the neck, as early recognition and intervention are critical to achieving favourable outcomes.

Keywords: Papillary thyroid carcinoma, lymph node metastasis, Cystic neck lump

INTRODUCTION

Papillary thyroid carcinoma (PTC) is the most common type of thyroid malignancy, accounting for approximately 80% of all thyroid cancers, with peak incidence occurring in the third and fourth decades of life (1). Although it typically presents as a thyroid mass, it is not unusual for PTC to manifest as a lateral neck lump (2). PTC has a well-documented propensity for lymphatic spread, and in some instances, metastatic lymph nodes may be palpable even in the absence of an identifiable primary thyroid tumour (3). In rare cases, metastatic lymph nodes from PTC can undergo cystic transformation (4). These cases may follow an indolent clinical course, mimicking benign conditions and potentially delaying the diagnosis and treatment of the underlying malignancy. This case report discusses a patient who initially presented with a cystic right-sided neck lump, which was later diagnosed as metastatic PTC in a cervical lymph node.

CASE REPORT

A 42-year-old gentleman with a background history of hypertension presented with a history of painless right neck swelling for nearly eight months, which had progressively been increasing in size. He had neither constitutional

symptoms nor other complaints. Upon examination, there was a 6 × 7 cm cystic, non-tender lump located at the root of the right side of the neck. The lump did not move with swallowing. No other neck swellings were identified, and thyroid examination revealed no palpable abnormalities. The nose, nasopharynx, oral cavity, oropharynx, and larynx were unremarkable on examination.

An ultrasound scan of the neck revealed a cystic lesion at the right root of the neck, measuring 6.0 × 2.6 × 7.0 cm, with no internal septation or calcification. The cyst was situated lateral to the right lobe of the thyroid and the right common carotid artery, compressing the internal jugular vein. There was no intrathoracic extension, and the thyroid gland appeared normal in size, echotexture, and vascularity. No enlarged lymph nodes were identified, and the ultrasound impression was suggestive of a lymphangioma.

**Corresponding Author: A.H.M.G.B. Abeysinghe, consultant surgeon/senior lecturer, Faculty of Medicine, Wayamba University of Sri Lanka.*

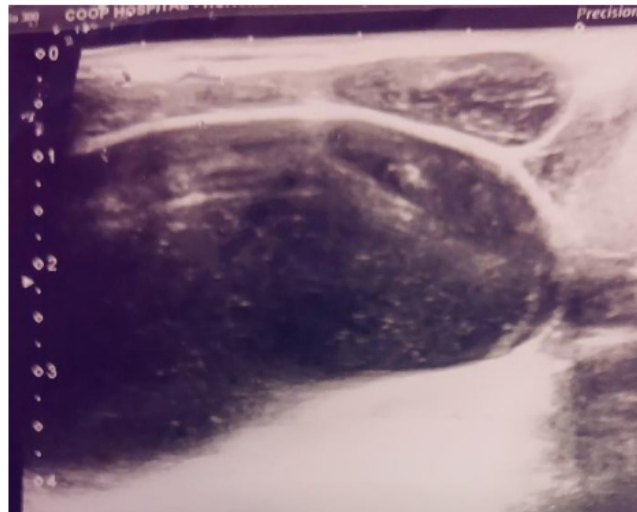


Figure 1

Fine-needle aspiration cytology (FNAC), although known to have limited sensitivity in diagnosing cystic neck lesions, was performed and returned negative for malignant cells. Based on the benign ultrasound findings and negative FNAC results, aspiration followed by the injection of hot water as a sclerosing agent was performed.

Two years later, the patient presented with a recurrence of the cystic neck lump. A repeat ultrasound revealed a unilocular cystic lesion measuring 6.5×5.5 cm, located posterolateral to the right sternocleidomastoid muscle, with no solid components. No cervical lymphadenopathy was noted, and the ultrasound impression remained suggestive of a lymphangioma or branchial cyst. A repeat FNAC was inconclusive. After discussion with the patient, an excisional biopsy was planned.

The excisional biopsy revealed cystic papillary carcinoma of the thyroid, either primary or metastatic. Immunohistochemical staining was performed to differentiate papillary lesions of the thyroid from other structures such as the lung. The lesion showed strong positivity for thyroglobulin and TTF-1, with CD-20 negativity, confirming a thyroid origin. A subsequent computed tomography (CT) scan of the neck was performed to rule out a missed thyroid nodule but showed no detectable thyroid lesion.

Following patient counseling, a total thyroidectomy with right lateral neck dissection was performed. The postoperative period was uneventful. Histopathology revealed multifocal papillary thyroid carcinoma (PTC) in the right thyroid lobe, with the largest lesion measuring 3 mm and three additional lesions measuring 1 mm each. Lymphatic invasion was noted in the largest lesion. No tumor deposits were identified in the lymph nodes or soft tissue harvested during the lateral neck dissection.

DISCUSSION

Thyroid cancer is the most common endocrine-related malignancy, though it remains rare compared to other cancers, constituting less than 1% of all malignant tumors (5,6). Differentiated thyroid cancers (DTC), which include papillary thyroid carcinoma (PTC) and follicular thyroid carcinoma (FTC), account for 90% of all thyroid malignancies (7). In PTC, local lymphatic spread is observed in 36–40% of patients, typically presenting as a thyroid nodule with associated firm cervical lymphadenopathy. However, PTC can also present as a solitary cystic neck mass without an identifiable thyroid lesion. In the case presented, the absence of palpable thyroid abnormalities led to an initial misdiagnosis. This highlights the importance of recognizing that extrathyroidal cystic neck masses may delay accurate diagnosis and treatment, as they can mimic benign cystic lesions of the neck, such as branchial cysts, thyroglossal duct cysts, dermoid cysts, epidermoid cysts, or lymphangiomas (8).

In approximately 90% of young adults, cervical neck cysts are typically benign (9). However, cervical lymph node metastasis from papillary thyroid carcinoma (PTC) can clinically and radiologically mimic a benign cervical cyst, particularly when cystic degeneration is present. This metastasis may arise from a primary thyroid tumour that has undergone cystic degeneration, or, though rarely, from the malignant transformation of ectopic thyroid tissue—an exceedingly uncommon condition (10).

Metastasis to cervical lymph nodes could be the first presentation without an identifiable primary tumour in thyroid glands [11].

Metastasis to cervical lymph nodes occurs in approximately 30% of all thyroid carcinoma cases. These metastatic

lymph nodes typically present as palpable masses in the anterior and lateral regions of the neck (12). Clinically, distinguishing between cystic lymph node metastases from an occult PTC and benign cervical cysts can be challenging during initial evaluation.

Imaging modalities such as ultrasound and computed tomography (CT) are commonly utilized to assess the morphology, extent, and involvement of adjacent structures, including the cervical lymph nodes, in cases of cervical masses. However, ultrasound is operator-dependent and requires considerable experience and skill to achieve accurate results, which may lead to misdiagnosis (13). Additionally, ultrasound may not be sensitive enough to detect very small thyroid nodules.

In support of this, in the case of our patient, two separate ultrasound evaluations indicated the presence of a benign cyst with no detectable thyroid lesions. Similarly, CT imaging failed to identify any thyroid abnormalities. This false-negative result could be attributed to the exceedingly small size of the thyroid lesion, making it difficult to detect through standard imaging techniques.

Fine-needle aspiration cytology (FNAC) is regarded as the gold standard for the diagnosis of thyroid nodules. Numerous studies have demonstrated the high sensitivity of FNAC in evaluating solid neck masses. However, its sensitivity is notably lower in cases of cystic neck lesions. In the case of our patient, FNAC yielded negative results on two separate occasions.

Basically, the initial evaluation of an adult presenting with a cystic neck mass should include a comprehensive clinical history, and a thorough head and neck examination, alongside appropriate imaging and FNAC analysis (14). In the absence of definitive findings from history, physical examination, and investigative modalities, a high index of suspicion for malignancy should be maintained, particularly in patients with known risk factors (15). These risk factors include age over 40 years and a history of radiation exposure to the neck.

CONCLUSION

Papillary thyroid carcinoma (PTC) can occasionally present as a cystic neck mass, and recent reports indicate an increasing trend in such cases. This highlights the importance of maintaining a high index of suspicion when assessing patients with a solitary cystic mass in the neck. Therefore, all cystic masses in the lateral neck should be excised, regardless of whether they appear benign or suspicious, and evaluated histologically. Further management decisions should then be based on the histological findings

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