



## Rare Case Report of Axillary Lymph Node Metastasis in Papillary Thyroid Carcinoma

### KEYWORDS

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**ABSTRACT** Differentiated thyroid cancer is, usually, associated with an excellent prognosis and indolent course. Distant metastases are rare events at the onset of thyroid cancer. Among these presentations, metastasis to the axillary lymph nodes is even more unusual. Only few cases of papillary carcinoma with axillary nodal metastasis were previously reported in the literature. We present a 60-year-old female who came to general surgery department in AS-RAM eluru with chief complaints of swelling in front of the neck and in the left axillary swelling since 3 months . Investigations later revealed diagnosis of papillary carcinoma of thyroid and metastatic deposits in left axillary lymphnodes.

### INTRODUCTION

Papillary thyroid cancer (PTC) is the most common form of differentiated thyroid cancer, comprising approximately 90% of the new cases of thyroid cancer in the United States (1). Surgery is the definitive management of PTC. Cervical lymph node metastases (LNM) are common in PTC and are associated with a significant probability for loco-regional recurrence of the disease, even in low-risk patients. These considerations generated a strong interest in a more comprehensive preoperative evaluation of the neck and renewed the controversy about the role and the extent of lymphadenectomy at the time of thyroidectomy . Careful preoperative clinical examination and neck imaging are very critical not to miss any LNM. Regional LNM are extremely common (up to 50%) at initial presentation of PTC. This feature does not apparently adversely affect long-term prognosis especially in patients under age 45 years at diagnosis . The usual pattern of cervical LNM of papillary thyroid cancer is through central and lateral neck compartments as well as superior mediastinal compartment. Axillary LNM as part of the disease spectrum of thyroid carcinoma is rare, with only isolated case reports .

### CASE REPORT

A 60-year-old female,came with chief complaints of swelling in the left axilla since 3 months,which was rapidly increasing in size,not associated with pain or bloody discharge forthe site , no history of any discharge from the nipple. h/o fever since 3 mo, h/o decreased appetite and loss of weight since 3 months, no significant past medical history other than known smoker since 40 years reverse smoking and alcoholic, no significant past medical history. Patient has a swelling in front of the neck since 3 years for which she had not undergone investigation or treatment.

#### On examination :

patient was ill built , poorly nourished with temperature 98.6°F, Pulse rate 112/min, B.P 130/70 mm Hg, A swelling of size 10x8 cm was noted in the left axillary region , on palpation there was local rise of temperature,and the swelling was firm in consistency with lobular surface.left supraclavicular lymphnode are palpable. with both breasts normal with no lumps and no diascharge from the nipple, Anterior neck swelling moving up with deglutition,lower border is visible,berry's sign is negative,no cervical lymphadenopathy.

All the base line investigation were done with HB4.9 gm/dl, total count 1480cells/cumm, pcv 15.5% and paltlet counts 1.1lakhs/cumm , differential count N-80%,L-18%,E-01%,M-01%,B-00%. peripheral smear was done and impression was sever microcytic hypochromic anemia with neutropenia and thrombocytopenia. Her uricacid 6.8mg/dl,serum creatinine 1.5mg/dl , serum electrolytes sodium 123mEq/l, potassium 3.5mEq/l . HIV, Hbs ag ,HCV were negative

#### Ultrasound of both the breasts and axilla was done;

The impression was , well defined heterogenous predominantly hypoechoic lesion measuring approximate 5x6cm with high vascularity on color Doppler noted in muscular plane in axillary region extending superiorly up to anterior axillary fold and inferiorly up to a line drawn parallel to inferior angle of scapula.

Both breasts normal ,nipple subareolar tissue normal , with no mass, and normal ducts.

**FNAC:** was done from

#### Thyroid nodules

**Microscopy :** moderately cellular haemorrhagic smear reveal thyrocytes exhibiting nucleoli,intranuclear inclusions and longitudinal nuclear grooves and scant cytoplasm. these cells are arranged discretely and in the form of follicled and clusters and sheets with intervening areas of thick red colloid.with well formed papillae lined by cells with characteristic empty appearing nuclei with concentric calcified structures.

**Impression :** features are suggestive of papillary carcinoma of thyroid

2. Left supra clavicular node
3. Left axillary mass.

**Microscopy:** cell rich haemorrhagic smears reveal polymorphous lymphoid population native of lymph node,many medium sized round to oval displaying the nuclear features as mentioned above. There is an increased mitotic activity and there are few uni to binucleate tumor giant cells.

Impression: features are suggestive of metastatic papillary carcinoma

Ultrasound of neck high frequency:

No lymphadenopathy of 1-6 cervical region.

**Discussion:** PTC and the follicular variant of PTC have a propensity for cervical lymphatic spread that occurs in up to 50% of patients on standard review of surgical pathologic specimens and in 90% of those examined for micro metastases. Regional lymph nodes are located in three compartments; central, lateral and mediastinal compartments. Axillary LNM from thyroid carcinoma is exceedingly rare. Search of the English language literature found only nine cases including our case. The last case report was published in 2011. The mean age was 55 years, with a patient aged as young as 21 years. Three patients presented with concurrent axillary LNM, and five presented with axillary LNM as a part of the recurrent disease process. In cases with recurrent disease process, the period from initial diagnosis to the development of axillary LNM ranged from 5 to 41 years. That was not the same in our case. The primary cancer was PTC in 8 patients and poorly differentiated adenocarcinoma in one patient. There has been no report of axillary LNM from follicular thyroid carcinoma. In all final pathology reports that specified tumor differentiation, all patients had poorly differentiated components suggesting that axillary LNM may be associated with poorly differentiated thyroid carcinoma. Seven patients out of the nine had synchronous or metachronous distant metastasis. Axillary LNM may thus be an indicator of systemic disease and a poor prognosis. Rouviere reported that there is a communication between the cervical and axillary lymphatics however, the physiologic flow is centripetal to the jugulo-subclavian junction

Consequently, mediastinal LNM sometimes occurs in PTC but still axillary LNM is rare. However, malignant tumors can alter and partially block lymphatic pathways, potentially resulting in axillary LNM. When sentinel nodes around the lymphatic terminus in the jugulo-subclavian confluence are involved by carcinoma and their lymphatic flow is blocked, disease spreads in a retrograde direction along the transverse cervical lymph nodes in the supraclavicular region. These retrograde pathways of lymphatic drainage can ultimately culminate in Axillary LNM. In our case we have been able to identify a lymph node at the left jugulosubclavian junction. In summary, we reported a case of axillary LNM from papillary thyroid cancer. Axillary LNM is rare and appears to indicate a poor prognosis.

#### CONCLUSION:

Thyroid cancer ALN metastases are rare representations of distant metastatic disease. Complete surgical resection remains the standard of care for all MTC metastases and for DTC patients with local symptoms or otherwise stable disease that can tolerate the operation

**Figure: A : axillary swelling**



**Figure:B : axillary swelling**



**Figure:c : thyroid swelling**



#### Supportive literature :

1.Axillary lymph node metastasis in papillary thyroid carcinoma: Report of a case and review of the literature

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Many authors have found no prognostic significance for cervical nodal metastases in differentiated thyroid cancer; [1],[10] however, in the isolated reports of metastatic axillary disease, four of the seven patients had distant metastatic lesions, with the lung being the commonest site, with only one patient alive with disease. Thus, axillary LNM can be an indicator of systemic disease and poor prognosis. [2],[3],[4],[5],[6],[7] Prophylactically, in view of this experience, we recommend monitoring axillary lymph nodes to be part of surveillance in patients who develop multiple recurrent or second primary malignancies after aggressive treatment of the neck.

2.Rouviere, as early as 1932, believed that there is communication between the cervical and axillary lymphatics, and that physiologic flow is centripetal to the jugulosubclavian junction. But altered lymphatic flow at the jugulosubclavian junction or even at the superior mediastinum has been known to occur primarily because of the blockage of lymph nodes, secondary to metastases, fibrosis as a result of surgical manipulation or even as a consequence of radiotherapy. In such instances, disease has been known to spread in a retrograde direction along the transverse cervical lymph nodes in the supraclavicular region to the axilla. [5],[8] Thus, inherently suggesting that while extensive surgery, radiotherapy, and multiple recurrences could be responsible for metachronous axillary LNM, locoregional anomalous metastatic patterns of lymphatic dissemination probably play a role in patients identified with synchronous lesions.

Axillary LNM is rare even in other malignancies of the head and neck. A review conducted over a time span of 10 years identified only four cases of axillary LNM from head and neck squamous cell carcinoma (SCC). Three common characteristics were noted among these patients

with axillary metastasis: (a) the initial neck mass or primary tumor had been successfully treated years prior to the development of the axillary metastases, (b) the neck had been treated with both surgery and radiotherapy, and (c) in all cases there was a new primary tumor or late recurrent SCC. [9]

In our patient, the malignancy, bilateral neck dissection with an initial right-sided yield of 18/21 positive nodes, and subsequent cervical nodal recurrences over a period of 6 years could have caused the axillary LNM.

Nakayama reviewed isolated reports of thyroid carcinomas presenting with axillary LNM. Carcinomas such as medullary thyroid carcinoma, mucoepidermoid carcinoma, and mucin-producing poorly differentiated adenocarcinoma were documented; however, there has been no report of such an event arising in a follicular thyroid carcinoma. [5] In our search, we found only seven reports [2],[3],[4],[5],[6],[7] in the English language literature documenting axillary LNM in PTC. These details are summarized in [Table 1]. Including our case, there are six women and two men. The mean age was 55, with a patient aged as young as 21 [5] presenting with PTC and a concurrent axillary nodal mass. Three patients presented with concurrent axillary LNM [2],[5],[6] and five presented with axillary LNM as part of recur-

rent [2],[3],[4],[7] disease. In the cases with recurrent disease, the period from initial diagnosis to the development of axillary nodal recurrence ranged from 5 to 41 years. [2],[3],[4]

The patients with axillary metastatic lesions had predominantly poorly differentiated tumors other than the case described by Kepenekci [6] where the histology was indicative of a well-differentiated neoplasm, thereby suggesting that axillary LNM may be associated with a poorly differentiated carcinoma. [2],[3],[5] Moreover, in repeated recurrences, PTCs can be transformed into poorly differentiated carcinomas, or into histological variants associated with worse prognosis as seen in our patient.

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Case no.	First author	Age/sex	Histological differentiation	Appearance of ALNM	Distant metastases	Outcome
1	Lal <sup>[2]</sup>	65/M	Poorly	Recurrence – 41 years	Multiple	Death – 1 month
2	Lal <sup>[2]</sup>	45/F	Poorly	Concurrent	Multiple	Death – 10 months
3	Koike <sup>[3]</sup>	51/F	Partial poorly	Recurrence – 5 years	Multiple	Death – 8 months
4	Ers <sup>[4]</sup>	62/F	NA	Recurrent – 8 years	None	Disease free 2 years postsurgery
5	Nakayama <sup>[5]</sup>	21/M	Partial poorly	Concurrent	Lung	Alive with disease
6	Kepenekci <sup>[6]</sup>	63/F	Well differentiated	Concurrent	None	NA
7	Angeles-Angeles <sup>[7]</sup>	58/F	Insular	Recurrent – 17 years	Breast	NA
8	Present case	64/F	Tall cell	Recurrent – 6 years	None	Disease free 6 months postsurgery

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