



Papillary Carcinoma of Thyroid Presenting As Lateral Neck Cyst - A Diagnostic Dilemma

Authors

**Jyotsna V. Wader¹, Rekha Matta², S.S. Kumbhar³, Dhiraj Kumar B. Shukla⁴,
Hardik Thakkar⁴, Atul B. Hulwan⁴**

¹Professor, Department of Pathology, KIMS, Karad

²Professor, Department of Cardio-Thoracic and Vascular Surgery, KHMRC, Karad

³Assistant Professor, Department of Pathology, KIMS, Karad

⁴Assistant Lecturer, Department of Pathology, KIMS, Karad

Corresponding Author

Dr. Jyotsna. V. Wader

Professor, Department of Pathology, Krishna Institute of Medical Sciences University,
Krishna Hospital and Medical Research Centre, Karad-415110 Maharashtra, India

Email: jyowader@gmail.com

Mob: +91- 8275391941

Abstract

Brachial cyst has been referred to be the main cause of cystic mass in the lateral aspect of neck in a young adult. However occult papillary carcinoma of thyroid can present as solitary cystic mass as the initial manifestation of the disease. A 32 years old male presented with lateral neck swelling since 2 years which on radiological investigations was suspected as vascular malformation. Excisional biopsy of the cystic mass revealed the papillary carcinoma of thyroid with metastasis to the adjacent lymph node. Tumor cells expressed TTF1. Radioisotope scan showed patchy tracer uptake. Total thyroidectomy with histopathological examination for the presence of papillary carcinoma in thyroid tissue is indicated in such cases. The case is being presented for its rarity and the diagnostic dilemma.

Keywords: Ectopic thyroid, Neck cyst, Papillary carcinoma, Metastasis

Introduction

Lateral neck cyst may be benign or malignant. Commonly noted benign cysts are branchial cleft cyst, epidermal cyst and cystic hygroma. Metastatic squamous cell carcinoma from oropharyngeal region undergoing cystic change has been reported as the main cause of malignant cyst. However occult papillary carcinoma of

thyroid can present as solitary cystic mass as the initial manifestation of the disease¹.

Case History

A 32 year old male presented to the outpatient department (OPD) of surgery with the complaints of painless swelling in the left supraclavicular region since two years with gradual increase in

size. Cytological examination of the neck mass was performed outside the hospital that yielded 3ml of clear pale yellow fluid. Smears after the centrifugation were reported to be negative for malignant cell which could not be procured for review. Radiological examination revealed elliptical large cystic lesion (m) 7.5 X7X2.5 cm. showing hypervascular space leading to the suspicion of vascular malformation. Surgical excision of the neck cyst was done following normal routine investigation. An already cut opened cystic mass (Fig.1) was sent to the department of pathology for histopathological examination. Mass (m) 8 X 7 X 2 cm showed rough external surface with two lymphnodes in adherent fibrofatty tissue. Inner surface shows a small papillary growth (m) 2 X 1 X 0.5 cm as (Fig. 2) along with a small solid area measuring 1 cm in diameter.

Representative sections from the cyst wall, papillary growth, solid area & lymph node were taken for microscopic examination. Microscopic examination revealed foci of papillary carcinoma of thyroid in the cyst wall, papillary growth & solid area (Fig.3 and Fig 4). Lymph node showed infiltration by the tumor (Fig.5). Diagnosis of the papillary carcinoma of the thyroid with cervical lymph node metastasis was given. Tumor cells showed positivity for TTF1. Following histopathological report, patient was explained the need for total thyroidectomy, which patient denied to undergo. Hence patient was advised to undergo radioisotope thyroid scan to detect the focus of carcinoma in the thyroid gland if any. Thyroid scan with $^{99\text{Tm}}\text{O}_4$ revealed patchy trans-uptake. Following the thyroid scan patient was lost to follow up.



Figure 1: Photograph showing a cystic mass with attached fibrofatty tissue.



Figure 2: Photograph showing a growth on the inner surface of a cystic mass.

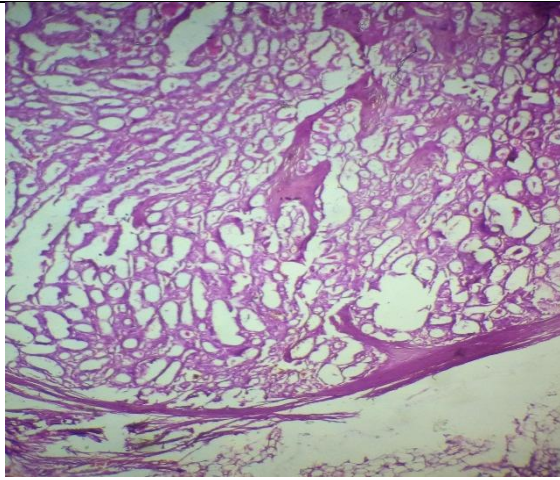


Figure 3: Photomicrograph showing papillary carcinoma of thyroid in a section from cystic mass. (H & E stain, 100x)

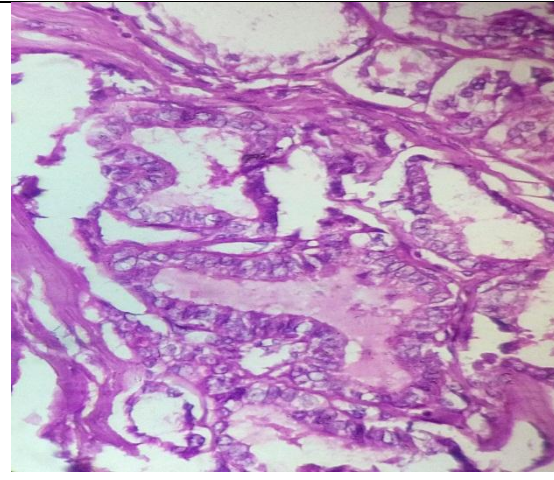


Figure 4: Photomicrograph showing high power view of papillary carcinoma of thyroid in a section from cystic mass. (H & E stain, 400x)

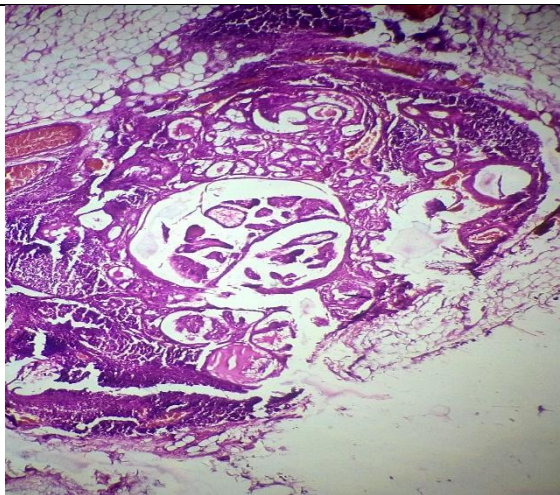


Figure 5: Photomicrograph showing evidence of involvement of lymphnode with cystic change in a case of papillary thyroid carcinoma. (H & E stain, 40x)

Discussion

Branchial cyst has been referred to be the main cause of cystic mass in the lateral aspect of neck in a young adult. However metastasis from oropharyngeal squamous cell carcinoma or from an occult papillary thyroid carcinoma undergoing cystic degeneration should be considered in the differential diagnosis as further management varies greatly².

Simple fine needle aspiration cytological examination & thorough oropharyngeal examination should help to establish the diagnosis in most cases of squamous cell carcinoma, which in the present case was negative. However differentiation between a solitary cystic lymph node metastasis from occult thyroid papillary carcinoma, branchial cyst and a vascular malformation may be difficult even with

radiological investigations or on fine needle aspiration cytology (FNAC) which hold true for the present case.

Excision of the cystic mass followed by histopathological examination is diagnostic in such cases. In the present case, diagnosis was established only after histopathological examination of excised cyst. In the case of papillary carcinoma of thyroid presenting initially with lateral neck cyst there can be possibility of either cystic degeneration of lymph node, metastasis from an occult thyroid papillary carcinoma or thyroid papillary carcinoma arising from ectopic thyroid tissue within a branchial cyst³.

Ectopic thyroid tissue has been reported in 7% of adults, with thyroglossal cyst being the most common and neck branchial cyst being the rarely reported site⁴. Malignant transformation of an ectopic thyroid tissue without any malignancy in the thyroid gland is extremely rare with only few number of cases reported in the literature predominantly of papillary type⁵.

Sidhu et al. in their report have stated that papillary carcinoma arising from ectopic thyroid tissue in branchial cyst should fulfil the following criteria⁶.

1. An epithelial lining layer
2. A sub-epithelial collection of lymphoid tissue typical of branchial cleft cyst
3. Normal thyroid tissue within the cyst wall adjacent to the focus of papillary carcinoma.
4. Positive staining for TTF1
5. No evidence of papillary carcinoma in the thyroid gland when it is removed and

subjected to histopathological examination⁶.

In the present case possibility of branchial cleft cyst was ruled out as there was no epithelial lining of cyst wall and no normal thyroid tissue was noted within the cyst wall. So the probable diagnosis of cystic degeneration of lymph node metastasis appears appropriate for the present case as the intact lymph node in the tissue adjacent to the cystic mass showed evidence of tumor infiltration.

However, histopathological examination of the thyroid gland after total thyroidectomy is indicated in the present case to look for the evidence of primary papillary carcinoma in the thyroid gland but could not be done because of unwillingness of the patient for the same.

Radioisotope scan of the thyroid gland helps in differentiating normal thyroid from the thyroid having neoplastic foci. Normal thyroid show very low uptake, whereas neoplastic lesion show focal or diffuse uptake⁷. In the present case, radioisotope scan showed patchy tracer uptake.

Patient being lost to follow up, no further investigations could be done. Possibility of the presence of papillary carcinoma in thyroid gland still remain as confirmation can only be done only if total thyroidectomy specimen is subjected to histopathological examination.

Papillary carcinoma of thyroid presenting as lateral neck cyst leads to diagnostic dilemma because of two possibilities of either cystic degeneration of lymph node metastasis or primary papillary carcinoma arising in ectopic thyroid tissue or branchial cyst^{1,3}.

Conclusion

Papillary carcinoma of thyroid presenting as lateral neck cyst is rarely encountered in clinical practice. All such cases should be evaluated carefully. Histopathological examination of thyroid gland is necessary in all cases of papillary carcinoma presenting as lateral neck cyst so as to rule out the occult primary malignancy in the thyroid gland.

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