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Clinical Presentation of Papillary Carcinoma Thyroid as a Lateral Neck Cyst: Case Report

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Abstract: *Papillary carcinoma accounts for 85% of all thyroid malignancies in iodine-sufficient areas and is the predominant thyroid cancer in children and individuals exposed to external radiation. Most patients are euthyroid and present with a slow-growing painless mass in the neck. Cervical cystic mass is a rare presentation of papillary thyroid carcinoma. This cystic change can cause diagnostic problems and not infrequently, delay identification of the primary thyroid tumor. We present a rare case of cystic papillary thyroid carcinoma, which presented as asymptomatic neck mass.*

Keywords: *cystic degeneration, lateral cervical cyst, papillary thyroid carcinoma*.

I. Introduction

Papillary carcinoma is the most common type of thyroid malignancy constituting about 85% of the total [1]. At presentation , approximately two-thirds of patients have gross disease localised to the thyroid as solitary thyroid nodule and progressive enlargement of thyroid gland. Regional lymph node metastasis are present at the time of diagnosis in 20% to 90% of patients with papillary thyroid cancer [2].

A pure cystic nodule, although rare (<2% of all nodules), is highly unlikely to be malignant [3]. Due to subcortical necrosis metasatic lymph nodes can present as cystic swelling particularly in younger patients which is a diagnostic challenge. A high level of clinical suspicion of papillary carcinoma with cystic metastasis is crucial while evaluating extrathyroidal cystic neck mass even in the presence of normal physical examination of thyroid gland.

Cystic neck masses appearing in the anterior or posterior triangles of the neck are usually benign. However, they may occasionally have a sinister origin and should be investigated rigorously [4]. The appearance of a solitary lateral cervical cystic mass as the only initial presenting symptom of occult thyroid carcinoma is extremely rare, with approximately 40 cases previously reported in the literature [5-9]. W report a case of papillary thyroid carcinoma presenting as lateral neck cyst.

II. Case Report

A 60 year old male patient presented with swelling in the lateral part of right side of neck since 3 years initially small in size which gradually progressed to present size of 5X6 cm. On examination, solitary swelling of around 5X6 cm in the posterior triangle. Superiorly it extends upto thyroid cartilage, inferiorly upto upper border of right clavicle. Swelling is cystic in consistency. Fnac of the swelling showed cytological features of cystic lesion with few atypical cells, probable differential diagnosis considered were lymphatic cyst, branchial cyst, mesothelial based cyst. Ultrasound of neck showed well defined vascular lobulated lesion with internal echos, internal septations with calcification favouring suppurative lymphadenitis. CECT neck and thorax showed well defined non enhancing fluid attenuation lesion measuring 5.4X6.5X5.7 cm in the lateral part of right neck with thin septa and calcific foci within suggestive of benign cyst / lymphatic cyst. Haematological investigation were within normal limits. Mantoux test was negative. Chest X-ray showed soft issue swelling of right lower neck with clear lung fields.

Patient underwent surgery under general anesthesia. Transverse incision was taken over the swelling, platysma was divided, cyst was separated from surrounding structures, medially it was found to be abutting right internal jugular vein which was separated. Fluid in the cyst was light brown colour. Postoperative period was uneventful. Histopathological assessment of the specimen showed unilocular cyst along with grey-white solid area measuring 2X1cm on cut surface. On microscopic examination cyst wall shows extensive lymphocytic infiltration along with plasma cells and foamy macrophages. The solid areas shows papellaroid lesion composed of complex, arborising papillae lined by columnar cells with overlapping having open chromatin with nuclear

grooving, with few colloid follicles suggestive of cystic papillary carcinoma of thyroid with xanthomatoid change.

Subsequently patient underwent total thyroidectomy with central lymph node dissection, radioactive iodine ablation postoperatively and is currently on suppressive dose of thyroxine.

III. Discussion

Differential diagnosis of cystic swellings in the neck include branchial cleft cysts, dermoid cysts, teratoma, epidermoid cysts, and cystic hygromas. Due to the increasing incidence of oropharyngeal carcinoma, cystic masses of the neck can also be metastases from an oropharyngeal or tonsillar tumour [7].

Differential diagnosis between branchial cyst and cystic degeneration within a lymph node replaced by metastatic thyroid carcinoma has to be properly established because of management considerations. This last condition usually appears as a solid mass in the central or paratracheal compartment as well as at the middle and lower jugular chain. Thus, the appearance of a solitary lateral cervical cystic mass as the only initial presenting symptom of occult thyroid carcinoma is extremely rare. Seven at al. [5] have reported 11% of thyroid malignancy in patients with primary diagnosis of lateral cervical cyst, thus alerting the surgeon to be aware of metastatic thyroid carcinoma being present in such cervical cystic lymph nodes in young patients.

Controversy exists regarding the origin of cervical lymph nodes containing papillary thyroid carcinoma in those patients in which a primary tumour of the thyroid has not been demonstrated. Traditionally, it has been thought that all of these lesions are metastatic foci from primary thyroid lesions [10]. However, new theories hypothesize that ectopic thyroid tissue may be present associated with a branchial cyst [11,12]. In relation to it, branchial cysts have been traditionally explained as a consequence of complete congenital obliteration of pharyngeal pouches two to four or, more recently, as epithelial inclusions lying within cervical lymph nodes as triggering a phenomenon of cystic degeneration [13]. Both theories may explain the presence of thyroid tissue within a branchial cyst. The "acquired" theory propose that epithelium from the upper aerodigestive tract enters a cervical lymph node via lymphatics and stimulates degeneration into a lateral cervical cyst.

Parham [14] reported the existence of epithelium positively stained for thyroglobulin in typical branchial cysts. Since the contribution of branchial pouches 4/5 to thyroid development is being given increasing embryological importance, the presence of persistent remnants which had failed to fuse with descending thyroid may explain its location within a branchial cyst. This theory is also supported by the presence of cysts in patients older than the third decade, the presence of cysts lying outside the upper one third of the sternocleidomastoid muscle and the rarity of finding a tract connecting a cyst to the pharynx [5]. Another possibility for papillary thyroid carcinoma in lateral neck cysts has been established in relation to benign metastases to cervical lymph nodes from the thyroid gland that undergoes ulterior malignization [15].

Papillary thyroid carcinoma is a slowly growing neoplasm which explains the relatively long duration in our patient. The long duration of such cysts in young aged patients can lead to incorrect provisional diagnosis of benign cysts [6]. Papillary thyroid carcinoma with extrathyroidal extension (ETE) occurs in 4% to 16% of cases and carries with it an increased risk of disease recurrence and death [16]. Common ETEs include involvement of recurrent laryngeal nerve, larynx, trachea, and esophagus.

On US, a central cystic area with thick irregular walls or an eccentric solid component may be seen. These solid areas usually demonstrate increased peripheral and intralesional vascularity on Doppler. Presence of punctate calcification within the solid component of the cystic node warrants careful search for primary papillary carcinoma in the thyroid gland. CT shows cystic nodal necrosis as a focal area of low attenuation with or without a surrounding rim of soft tissue enhancement. On MRI, it shows high signal intensity on T2 weighted images and low signal intensity on T1 weighted images.

FNAC is less sensitive in the diagnosis of cystic neck masses compared with solid masses having a false negative rate ranging from 50% to 67% [18]. The aspirate of typical branchial cyst has a characteristic opaque yellow colour. Any aspirate which doesn't have the characteristic of branchial cyst should raise suspicion of malignancy. Due to thyroglobulin cyst fluid of papillary carcinoma thyroid are red pr brown in colour. The accuracy of FNAC in the diagnosis of palillary carcinoma thyroid can be improved by thyroglobulin immunohistochemical staining and assay of the aspirate fluid. Ultrasound guided FNAC that can obtain material from the wall and solid part of the cyst increases the accuracy of FNAC [19,20].

Excisional biopsy is essential when FNAC is inconclusive for the diagnosis of papillary carcinoma of thyroid [18]. Frozen section analysis aids in performing total thyroidectomy and modified radical neck dissection in the same sitting when malignancy is suspected clinically or radiologically. Radioiodine ablation of thyroid remnant with suppressive dose of thyroxine is advocated postoperatively to reduce recurrence.

Papillary thyroid carcinoma (PTC) clinically behaves in an indolent fashion and carries an excellent prognosis >90% survival at 20 years. ETE has a 54% 15 year survival and 29% 30 year survival [16].

IV. Conclusion

Papillary thyroid carcinoma ids the most common of thyroid malignancies. PTC ptesenting as lateral neck cyst is metastasis to cervical lymph nodes. High index of suspicion must be adopted while managing unusual neck cysts located at unusual sites in adults. Ultrasound and CT scan can detect lesions in thyroid gland. FNAC is not very accurate in diagnosis of cystic lesions. Aspirated fluid thyroglobulin and thyroid transcription factor levels may help to differentiate cystic thyroid carcinomas from benign cystic lesions. excisional biopsy is essential to rule out malignancy and to avoid the delay in the diagnosis and management. Complete cyst excision with total thyroidectomy and node dissection provides good prognosis even in setting of extrathyroidal extension.

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FIGURES

Figure 1: preoperative image

Figure 2: CECT neck A,axial view; B, coronal view

Figure 3: Intra operative image

Figure 4: histopathological examination of specimen, A,low power; B, high power