



## A CASE REPORT OF PAPILLARY CARCINOMA OF THYROGLOSSAL DUCT CYST

## Otorhinolaryngology

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## ABSTRACT

Thyroglossal duct cysts are located in the midline of the neck. The coexistence of carcinomas in thyroglossal duct cysts is extremely rare < 1 %, with most common being papillary carcinomas. Usually, the diagnosis is made postoperatively after excision of the cyst with histopathological examination. We are reporting a case of 26-year-old female diagnosed with papillary carcinoma within a thyroglossal duct cyst, who underwent total thyroidectomy.

## KEYWORDS

## INTRODUCTION

The thyroid gland descends from the foramen cecum to its location at the point below the thyroid cartilage. It leaves behind an epithelial tract known as the thyroglossal tract; this tract usually disappears during the 5th-10th gestational weeks. Incomplete atrophy of the thyroglossal tract or retained epithelial cells, however, creates the basis for the origin of a thyroglossal duct cyst (TGDC). [1,2] It is situated in the midline of neck. In majority of cases it is benign. Thyroglossal duct cyst coexisting with carcinoma is rare and when present, papillary carcinoma is most common of all. Incidence of thyroglossal duct cyst with malignancy is <1%. [3]

## CASE REPORT

26-year-old Muslim female patient presented to our department, with chief complaint of midline neck swelling since 3 years which was progressively increasing in size since one year. Not associated with pain, difficulty in swallowing, difficulty in breathing, change of voice.



Figure-1 & 2 Pre-operative Picture Of Swelling – Anterior And Lateral View

## ON EXAMINATION

5\*4 cm sized swelling was noted over midline neck, non-warm, non-tender, cystic swelling, moved with deglutition and movement of tongue. There was no other visible swelling in neck. Ear, nose, and throat examination was normal.

**USG NECK** was suggestive of 43\*38mm sized well defined cystic lesion with internal echoes and increased vascularity. Approximately 15\*10mm sized solid component within it was noted in midline in suprathyroid region. Thyroid gland was normal. No significant

cervical lymphadenopathy. Possibility of thyroglossal duct cyst with secondary malignant transformation to be ruled out.

**FNAC** revealed papillary lesion of thyroid with possibility of papillary carcinoma.

**CT NECK** was suggestive of 6\*4.5\*4.5cm sized well defined rounded cystic lesion. 2\*1.5cm sized enhancing soft tissue component with specks of calcification within it is noted. Few sub centimeter lymph nodes are noted in relation to level Ia, II, III. Both lobe of thyroid appears normal. Possibility of thyroglossal cyst with malignant mass lesion within it.

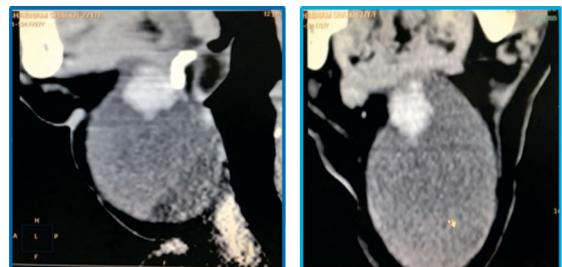
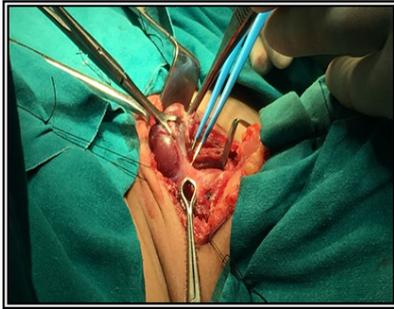


Figure-3 Ct Scan Showing Thyroglossal Cyst

## TREATMENT

After confirmation of radiological and cytological investigation, thyroglossal duct cyst excision with total thyroidectomy with central compartment node dissection was performed. Horizontal midline neck incision was kept extending up to bilateral sternocleidomastoid muscle. Subplatysmal flap elevated. Sternohyoid and sternothyroid muscles cut and separated. Around 5 \* 5 cm<sup>2</sup> sized cystic swelling revealed, which was separated from surrounding structure and removed. Total thyroidectomy done with preservation of parathyroid gland. And bilateral recurrent laryngeal nerve secured. Central compartment neck nodes removed, because CT scan was suggestive of neck nodes. All specimen sent for histopathology examination. Histopathological examination proved it to be thyroglossal duct cyst with papillary carcinoma within it; thyroid gland and lymph nodes were free of disease. Recovery was uneventful and patient was put on thyroid supplements after 3 months of surgery.



**Figure-4 Intra-operative Picture**



**Figure-5 Picture Showing Specimen Of Thyroglossal Cyst And Thyroid Gland Along With Isthmus**

## DISCUSSION

Clinically, majority of thyroglossal duct cysts (TGDC) are benign and present as slow-growing, asymptomatic neck masses. It is estimated that they occur in 7% of the adult population. However, most patients with TGDC are children and adolescents. In some studies, the age of presentation ranged from 1 to 82 years with an average of 39 years. [4] The average age of presentation is in the fourth decade of life. [5, 6]

Brentano in 1911 and Uchermann in 1915 reported the first case of neoplasm in a thyroglossal duct remnant. [7] Papillary carcinoma is most common of all malignancies associated with thyroid gland but in thyroglossal duct cyst papillary carcinoma is rare. These carcinomas are relatively non aggressive and lymphatic spread is rare.

Thyroglossal duct cyst can be evaluated preoperatively with Ultra sonography, CT scan, magnetic resonance imaging and FNAC depending upon case requirement. Even after these investigations a diagnosis of thyroglossal duct cyst carcinoma is many times made postoperatively after histopathological examination. On ultrasound examination of neck, the cyst presents as an anechoic to hypo-echoic lesion with the presence of solid areas along the cyst wall or within the cyst and may have micro calcifications. Ultrasound, CT and MRI imaging studies can be used to evaluate the neck for nodal metastases as per need and surgical planning. Radionuclide studies may be used to see whether normally functioning thyroid gland is present in neck and whether there are any cold areas in the thyroid tissue of the cyst and the thyroid gland. The CT and <sup>99</sup>Tc scans in thyroid diagnosis is advised only in patients with either abnormal thyroid function tests or absence of the thyroid gland proper during ultrasonography. [8, 9]

The optimal treatment of thyroglossal duct cyst carcinoma is not standardized. Sistrunk's procedure, a block resection of the TDC along with the hyoid bone and the surrounding soft tissue towards the foramen cecum, is the first-choice surgery for thyroglossal duct cyst carcinoma. [10]

There is still controversy regarding the need to remove the thyroid gland in the case of a papillary carcinoma of thyroglossal duct cyst. Thyroidectomy is recommended in cases where (a) the thyroid gland is found to be nodular, with a cold nodule in a thyroid iodine uptake scan; (b) enlarged lymph nodes are present, or (c) a history of neck irradiation exists. [11]

After total thyroidectomy life time thyroid supplements (thyroxin 200-250microgram) to suppress TSH levels is mandatory and

surveillance should be for life.

Miccoli et al. propose that 'total thyroidectomy for tumours of thyroglossal cysts could be justified by the high incidence of associated papillary carcinomas of the thyroid and by the relatively aggressive nature of some tumours'. [12, 13]

According to Balalaa et al., total thyroidectomy is indicated, whether or not the thyroid is involved clinically or radiologically, as it aids staging and can facilitate the detection of metastases. [14]

Patel et al. have shown that, in the presence of a clinically normal thyroid gland, the only factor that considerably affected outcome prognosis was the extent of surgery for the thyroglossal cyst itself. Simple cyst excision was inferior to Sistrunk's procedure (10-year survival rates being 95% and 75%, resp.) and total thyroidectomy was of no additional survival benefit. [15]

Currently, the performed methods include the Sistrunk procedure, near total thyroidectomy, total thyroidectomy, <sup>131</sup>I ablation and thyroid suppression therapy. Some surgeons prefer treating thyroglossal duct carcinoma with a near total or total thyroidectomy and <sup>131</sup>I ablation as the recurrence rate is the lowest.

Regional lymph node metastasis has been reported in up to 88% of thyroglossal duct cyst carcinoma. [16] This feature supported Hartl et al.'s statement that routine central compartment (level VI) dissection allows more precise lymph node staging, which may modify <sup>131</sup>I ablation necessity. [17]

Metastatic spread is very uncommon, and the prognosis is usually very good. In a review by Patel et al., with a median follow-up of 71 months, the 5-year and 10-year Kaplan-Meier overall survival was 100% and 95.6%, respectively. [18]

Papillary carcinoma in a thyroglossal duct cyst has a good prognosis, and metastasis is reported to be very rare. [19]

## CONCLUSION

- The diagnosis of thyroglossal duct cyst carcinoma can be missed due to its rarity.
- Papillary carcinoma with thyroglossal duct cyst is rare.
- Sonography of neck is primary investigation and histopathology examination is conclusive.
- Thyroglossal duct with papillary carcinoma with enlarge neck nodes – total thyroidectomy with cyst excision with life time thyroid hormonal support is the treatment of choice.
- Early diagnosis and prompt treatment gives better prognosis with survival rate of 95.5%.

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