

# PRIMARY SQUAMOUS CELL CARCINOMA OF THE THYROID GLAND - CASE REPORT AND REVIEW OF THE LITERATURE

Petko Dimov<sup>\*.1</sup>, Daniel Stefanov<sup>\*</sup>, Tsvetan Stanimirov<sup>\*</sup> and Emilia Naseva<sup>\*\*</sup>

<sup>\*</sup>Clinic of Abdominal Surgery, Military Medical Academy, Sofia, Bulgaria., <sup>\*\*</sup>Public Health, Medical University - Sofia, Sofia, Bulgaria.

## ABSTRACT

**Background** Primary squamous cell carcinoma of the thyroid gland (PSCTC) is a rare malignancy, but demonstrates a very aggressive behaviour and has a poor prognosis. The best treatment is radical surgery and postoperative chemo- and radiotherapy, although there are some reports that this tumour is resistant to conservative therapy. Patients often present with a large tumour mass on the neck with a solid consistency. Diagnosis is usually set during the operation - on a frozen section. **Case report** We present a case of a 71-year-old man with weight loss and rapidly growing neck mass for the last two months. MRI showed a tumour of the left lobe of the thyroid gland, compressing the trachea and the adjacent structures. A left thyroidectomy with isthmectomy has been performed. Frozen section showed primary squamous cell carcinoma. Tumour recurrence two months later led to the second operation with the same effect. The patient died in a couple of months. **Conclusion** Because of its rarity and poor biology, treatment of PSCTC remains unsatisfactory. There are still many challenges on its origin, behaviour and prognostic factors. The results of postoperative chemo- or radiotherapy are controversial.

**KEYWORDS** squamous cell cancer, thyroid disease, thyroidectomy, life expectancy

## Introduction

In the last decades, the treatment of thyroid cancer achieves great success, and that is due to multimodal strategies, including different specialists - surgeons, endocrine therapists, chemo- and radiotherapists. Nowadays differentiated papillary cancer has over 90% ten-year survival rate after surgery. However, some of the neoplasms like poorly differentiated, anaplastic, medullary and squamous cell thyroid cancers tend to manifest more aggressive biology and they remain a real problem for

thyroid specialists. Fortunately, they are very uncommon.

One of the most aggressive thyroid cancers is the primary squamous cell thyroid cancer (PSCTC). It takes 0.7-3.4% of all the thyroid neoplasms, and only a few cases have been reported in the world literature. Before diagnosing case as a primary squamous cell carcinoma of thyroid, possibility of other primary focuses of squamous cell carcinoma which can metastasise to thyroid must be excluded. PSCTC appears like an extremely fast growing solid tumour mass, early developing lymph and distant metastases. Most of the patients die within the first six months after diagnosis [1, 2].

## Case Report

We present a case of PSCTC in 71-year-old man, former smoker with moderate obesity (BMI=31) and without a history of goitre. He was admitted to our clinic due to progressive neck enlargement for the past two months and reported for weight loss. During the medical examination, we found a neck distortion by a hard consistency tumour mass. Blood tests were normal. MRI

Copyright © 2017 by the Bulgarian Association of Young Surgeons  
DOI:10.5455/IJMRCR.PRIMARY-SQUAMOUS-CELL-CARCINOMA-OF-THE-THYROID-GLAND

Accepted: December 19, 2017

Manuscript Associate Editor: George Baytchev (BG)

Editor-in Chief: Cvetanka Hristova (BG)

Reviewers: Ivan Inkov (BG)

<sup>1</sup>Clinic of Abdominal Surgery, Military Medical Academy, Sofia, Bulgaria.

dimovp@gmail.com

showed tumour mass involving the whole left lobe of the thyroid gland, stuck to the trachea and the adjacent tissues. Surgery was performed. Intraoperatively there was a tumour evolving from the left lobe of the thyroid gland, tightly attached to the trachea and reaching posterolateral the left jugular vein and the left carotid artery without definite signs of infiltration. The right lobe and the isthmus were intact.

A left lobectomy with isthmectomy was performed. The recurrent laryngeal nerve and the parathyroid glands could not be visualised. A tumour was removed from the trachea and the adjacent tissues with a LigaSure Precise. The same device was used to seal the significant thyroid vessels. With a blunt dissector, the tumour was removed from the left jugular vein and the left carotid artery.

The result of the frozen section procedure showed PSCTC. Having in mind the poor prognosis of that tumour and the impossibility of visualising the recurrent laryngeal nerve and the parathyroid glands, as well as the inappropriate signs of radical surgical procedure, we considered the total thyroidectomy inappropriate.

A body scan of the patient was performed postoperatively, which showed no signs of malignancies elsewhere and no lymphadenomegaly.

The patient was discharged from hospital on the third post-operative day in good condition and preserved phonation.

Three months after surgery while doing chemotherapy, the patient was found to have a recurrence of symptoms of tracheal pressure and difficulty breathing. A tumour has been reached its initial sizes. Another surgery was performed with a tumour reducing operation to alleviate the symptoms. On the 20th post-operative day, there were signs of another recurrence with the same size of a tumour. No further surgery was recommended, and the patient was referred to symptomatic treatment. He died in the fifth month after detecting the disease.

## Discussion

PSCTC is an uncommon neoplasm with small reported series and few in number cases. It is considered to be highly aggressive with a poor prognosis, usually affects older patients between the fifth and sixth decade and is traditionally associated with a history of goitre. In the majority of cases, the patients present at the time of diagnosis with a rapidly enlarged neck mass, followed by symptoms of infiltration and compression of adjacent neck structures (dyspnea and hoarseness), and that is why the treatment is so difficult. Infiltration of cervical lymph nodes may or may not be present.

Some authors consider this tumour as a form of the anaplastic or poorly differentiated thyroid cancer. The data of its origin and behaviour is still insufficient, and no prognostic factors are apparent [3 - 5].

The presence of squamous cells in the thyroid gland has been known long ago [6, 7, 8]. LiVolsi and Merino [8] propose that in most of the cases they appear as a result of metaplasia from follicular epithelial cells. It is considered, that squamous cell area is present in approximately 40% of the PSCTCs.

Because of its rarity, the role and outcome of chemoradiation in the management of PSCTC have not been appropriately studied, though many studies suggest that it is poorly responsive to either chemotherapy or radiotherapy. So the best treatment is early diagnosis and aggressive surgery with the goal of achieving a radical resection, though it may not often be possible.

These patients have a very poor prognosis, and all die within few months after surgery (6, 10). In this case, we considered the total thyroidectomy inappropriate, because of the higher risk of the recurrent laryngeal nerve and parathyroid glands injury, and because even a radical total thyroidectomy with lymph node dissection does not improve the prognosis and the survival rate according to the reported data.

Preserved phonation and parathyroid function ensure the patients a certain comfort of life, regardless of life expectancy.

## Conclusion

Primary squamous cell thyroid carcinoma (PSCTC) is sporadic and aggressive malignancy having median survival around six months. Often at the time of presentation PSCTC infiltrates adjacent structures. After excluding metastatic disease, a radical thyroidectomy combined with radiotherapy is the treatment of choice, although some authors consider this tumour as chemo- and radioresistant.

## Disclosure Statement

There were no financial support or relationships between the authors and any organization or professional bodies that could pose any conflict of interests.

## Competing Interests

Written informed consent obtained from the patient for publication of this case report and any accompanying images.

## References

1. Hawk WA, Hazard JB. The many appearances of papillary carcinoma of the thyroid. *Cleve Clin Q* 1976; 43: 207–216.
2. Johnson T, Lloyd RV, Thompson NW, Bierwaltes WH, Sisson JC. Prognostic implications of the tall cell variant of papillary thyroid carcinoma. *Am J Surg Pathol* 1988; 12 (1): 22–27.
3. Ostrowski ML, Merino MJ. Tall cell variant of papillary thyroid carcinoma: a reassessment and immunohistochemical study with comparison to the usual type of papillary carcinoma of the thyroid. *Am J Surg Pathol* 1996; 20 (8): 964–974.
4. Bronner MP, LiVolsi VA. Spindle cell squamous carcinoma of the thyroid: an unusual anaplastic tumor associated with tall cell papillary cancer. *Mod Pathol* 1991; 4: 637–643.
5. Zhuang Z, Berttheau P, Emmert-Buck MR, Liotta LA, Gnarr J, Linehan WM, et al. A new microdissection technique for archival DNA analysis of specific cell populations in lesions less than one millimeter. *Am J Pathol* 1995; 146: 620–625.
6. Prakash A, Kukreti SC, Sharma MP. Primary squamous cell carcinoma of the thyroid gland. *Int Surg* 1968; 50 (6): 538–541.
7. Goldberg HM, Harvey P. Squamous cell cysts of the thyroid. *Br J Surg* 1956; 43: 565–569.
8. LiVolsi VA, Merino MJ. Squamous cell in the human thyroid gland. *Am J Surg Pathol* 1978; 2: 133–140.

9. Gould VE, Gould NS, Benditt EP. Ultrastructural aspects of papillary and sclerosing carcinomas of the thyroid. *Cancer* 1972; 29: 1613–1625.
10. 10. Motoyama T, Watanabe H. Simultaneous squamous cell carcinoma and papillary adenocarcinoma of the thyroid gland. *Hum Pathol* 1983; 14: 1009–1010.