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DISSEMINATION OF DIFFERENTIATED THYROID CARCINOMA DUE TO PROLONGED TOTALIZATION OF THYROIDECTOMY – CASE REPORT

Abstract: Differentiated thyroid carcinomas (DTC) are the most common carcinomas in thyroid pathology. The most common DTC is papillary thyroid carcinoma (PTC) which tends to spread lymphogenously. Beside spreading of malignant disease from the primary focus toward local and regional lymph nodes, intrathyroid lymphogenous spreading is also seen, as well as multifocal character of PTC.

From this reason, after the diagnosis of PTC is established, desired therapy should be total thyroidectomy (with/without neck dissection) along with additional radioiodine therapy.

Work: Differentiated thyroid carcinomas (DTC) are the most common carcinomas in thyroid pathology. They represent 90% of all thyroid carcinomas. They are relatively easy to diagnose and have good prognosis. PTC occurs in 75%, follicular in 10% and Hurthle cell carcinomas in 2-4%.

Female patient G.K. (1990) was diagnosed with nodular goiter of the right thyroid lobe in 2009. Although FNAC was benign, right lobectomy was performed the same year. Histopathological exam showed classic type of PTC 40mm in diameter. After the surgery patient was prescribed L-thyroxin substitution. Totalization of thyroidectomy has not been advised.

In 2015 patient underwent surgery for the second time due to a number of pathological lymph nodes of the right side of neck. Left lobectomy was performed along with extraction of lymph nodes of the right side of the neck.

Definitive histopathological findings: Left lobe of the thyroid gland with several focuses of papillary thyroid carcinoma (up to 1mm in diameter) which represent intrathyroid lymphogenic dissemination of the disease. One focus is in adjacent connective and vascular tissue located outside of the thyroid gland.

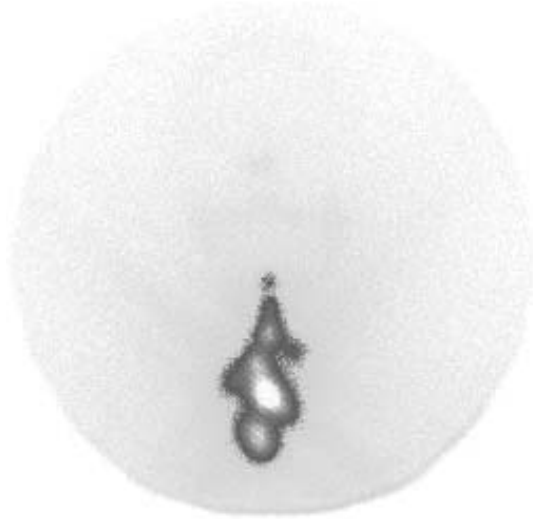
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Lymph nodes (right side of the neck) – among 12 LN, 5 had PTC metastasis.

Lymph node from the carotid bifurcation – PTC metastasis.

In June 2015 patient received therapeutic dose of I-131 (5,55 GBq) in our institution. WBS after the therapy showed multiple focuses of radioiodine accumulation along the mid-line of the neck: from submental region down to jugular notch.

Blood parameters were: TSH=64.0 mIU/l (0.3-4.2), Tg>300ng/ml, antiTgAt=20 U/ml.



Picture 1. Posttherapeutic targeted scan of the head and neck (June 2015)

Second reoperation was performed in October 2015. with the neck dissection (right central, right lateral and laryngeal anterior).

Definitive histopathological findings:

1. Right lateral LN: 2 LN with PTC metastasis.
2. Right central LN: 11 LN out of 12 LN had PTC metastasis
3. Laryngeal anterior LN: one out of 2 LN had PTC metastasis.

The second dose of I-131 (5,55 GBq) was received at the end of January 2016.

Blood parameters were: TSH>75.0 mIU/l, Tg=76.8 ng/ml, antiTgAt=20 U/ml.

WBS after the therapy showed two focuses of I-131 accumulation: one in jugular notch and the other one behind manubrium.



Picture 2. Posttherapeutic targeted scan of the head and neck (February 2016)

Discussion: Papillary thyroid carcinomas (PTC) are the most common carcinomas in thyroid pathology. They are relatively easy to diagnose and have good prognosis. Five-year survival is between 97% and 99% of patients. Because of that, we can find more and more papers where is discussed whether there is a need for radicality (total thyroidectomy and radioiodine therapy) in this carcinoma at all.

On the other hand, PTC characteristics that are speaking in favor of radicality are: multifocal PTC which is not rare, intrathyroid lymphogenic dissemination and tendency of dissemination in local and regional lymph nodes. Minor importance has tendency of poorly differentiated papillary carcinoma to dedifferentiate into very aggressive anaplastic carcinoma.

High-risk population according to DTC treatment protocols are patients younger than 15 and older than 45 years. Our institution experience shows that the population which has the highest rate of disseminated disease or prolonged disease is between 15 and 30 years of life.

This work presented the case of a young female patient who underwent right hemithyroidectomy and was diagnosed with papillary thyroid carcinoma. Six years after the first surgery she had another one when the surgeon has completed thyroidectomy (left lobe) and has extracted pathological lymph nodes on the right side of the neck. PTC focuses in the left lobe were up to 1mm in diameter while the lymph nodes were around 2cm in diameter. It can not be expected that these focuses in the left lobe have given metastasis in contralateral side of the neck which are this big.

We assume that lymph nodes, which were on the same side of the neck as the first PTC from 2009, represent late manifestation of disseminated disease from the primary focus. Focuses of microcarcinoma in left lobe present intrathyroid lymphogenous dissemination, as histopathologic findings showed. But, we can not distinguish between lymphogenous dissemination and new multicentric focuses without certain histopathologic procedures (which are not commonly done). Because of this, microcarcinoma in the left lobe could be „de novo“ formed multicentric neoplasm.

Our conclusion is: if totalization of the thyroidectomy and additional radioiodine therapy has been done right after the first surgery in 2009., there would be several positive outcomes:

- intrathyroid dissemination of the disease/appearance of new focuses could be prevented
- with radioiodine ablation in thyroid bed appearance of new focuses during the life could be prevented
- radioiodine therapy could have had therapeutic effect on (as we suppose) micrometastasis in the lymph nodes on the same side of the neck

Conclusion: After the PTC diagnoses has been established the desired therapy should be total thyroidectomy along with additional radioiodine therapy. Only this way we can prevent the disease to disseminate or to become inoperable.

Follow up of the patient in terms of tumor markers (thyroglobuline, antiTg antibodies) is facilitated, also.

Literature:

1. Nuclear Medicine, Robert E. Henkin, Mosby, 2006
2. Advances in Nuclear Oncology, Emilio Bombardieri et al, Informa Healthcare 2007.
3. The Pathophysiologic Basics of Nuclear medicine (Second Edition), Abdelhamid Elgazzar, Springer, 2006
4. Prognostic significance and surgical management of locoregional lymph node metastases in papillary thyroid cancer, Georg F. W. Scheumann et al., World Journal of Surgery, 1993.