

Nonfunctioning parathyroid carcinoma associated with parathyromatosis. A case report

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SUMMARY

We report on the case of a 39-year old man who underwent a thyroidectomy and a parathyroidectomy with misdiagnosed medullary carcinoma of the thyroid in 2013. During the operation the thyroid gland and parathyroid glands were artificially damaged due to the complicated surgical access to the glands because of the obesity of the patient as well as the deep placement of the enlarged parathyroid glands. Three years later, the neck ultrasound showed bilateral nodules on the neck, suspected to be metastases of the medullary carcinoma. Microscopically, the nodules were found to be focuses of parathyromatosis, and there was also an infiltrating carcinoma. This lesion was reclassified after clinico-pathological correlation and immunohistochemical examination as nonfunctioning parathyroid carcinoma. This article discusses morphological and immunohistochemical features of parathyromatosis and parathyroid carcinoma and its separation from lesions with which it may be misdiagnosed.

Keywords: parathyromatosis – nonfunctioning parathyroid carcinoma – thyroid gland – parathyroid glands

Nefunkční karcinom parathyroidey v terénu parathyreomatózy. Kazuistika

SOUHRN

Prezentujeme případ 39-letého muže, který v roce 2013 prodělal thyreoidektomií s parathyreoidektomií následně s mylně diagnostikovaným medulárním karcinomem štítné žlázy. Štítnou žlázu i příštítná tělíska bylo obtížné exstirpovat pro obezitu pacienta a pro atypickou lokalizaci příštítného tělíska. Obě tyto struktury byly při operaci arteficiálně porušeny. Tři roky po výkonu se u pacienta objevily v krčních měkkých tkáních uzly v lymfatických uzlinách suspektní z metastáz. Mikroskopický obraz však odpovídal uzlům parathyreomatózy a invazivnímu nádoru, který byl po doplnění klinických údajů a imunohistochemického vyšetření překlasifikován na nefunkční karcinom parathyroidey.

V článku diskutujeme morfoloogické i imunohistochemické znaky parathyreomatózy a karcinomu parathyroidey a možné diagnostické omyly.

Klíčová slova: parathyreomatóza – nefunkční karcinom parathyroidey – štítná žláza – příštítné tělísko

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The pathology of parathyroid glands is considered to be a routine practice, usually lacking any surprising findings. The most common material examined is a pathologically enlarged parathyroid gland in the setting of hyperparathyroidism. The frequently required perioperative frozen section investigation is intended to prove that the pathological tissue was identified adequately during surgery. The definitive diagnosis is then usually either adenoma or hyperplasia. In contrast with the routine flow of the patients we present the case of a rare nonfunctioning parathyroid carcinoma with local metastases coexisting with parathyromatosis in a patient with a history of previous thyroidectomy with parathyroidectomy of the ectopic parathyroid glands.

CLINICAL HISTORY

The patient was a 39-year-old obese man, who was referred to the Ear, Nose and Throat (ENT) department for a nodule in

the caudal part of the right lobe of the thyroid gland and for an enlarged ectopic parathyroid gland located in the deep cervical soft tissue on the right side, both found by neck ultrasound and scintigraphy. Fine needle aspiration cytology of the thyroid nodule was suspicious for malignancy (Bethesda V). The patient underwent a thyroidectomy and a parathyroidectomy in 2013. During the operation, the capsules of both the enlarged parathyroid gland and of the thyroid nodule were artificially damaged due to the complicated access to the lesions due to the obesity of the patient and the deep placement of the enlarged parathyroid gland. Surgical specimens consisted of a thyroid, a pathologically enlarged parathyroid gland and one normal parathyroid gland. The tumor of the thyroid gland was diagnosed as medullary carcinoma. Support for such a diagnosis was found in the strong positivity of chromogranin A and deposits of amyloid. A staining for calcitonin was interpreted as positive, though it was at the level of background. After the operation, the level of serum calcium was normal (2.25 mmol/L), the concentration of calcitonin was decreased (0.59 ng/L) (Tab. 1). The concentration of parathormon was not examined.

The patient was followed-up on at the ENT department and in 2015 the neck ultrasound showed enlarged cervical lymph nodes. The patient underwent bilateral cervical block dissection. Before the second surgery, his serum calcium (2.25 mmol/L) and parathormone (iPTH)(3.09 pmol/L) were within normal values, the concentration of calcitonin was decreased (0.59 ng/L). In the surgical specimen there were sixteen lymph nodes with features of hyperplasia and without metastases. One of the supposed

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