Treatment of Difficulty for a Diagnosis of the Parathyroid Cancer

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Abstract

A case was a 69-year-old male, who presented an inferior limb lassitude approximately in January 2009. Biochemical findings showed the following abnormalities: serum calcium, 16.5 mg/dl; urea nitrogen, 2.42 mg/dl; and intact Parathormone (PTH), 2190 pg/ml. Ultrasonographic findings of the neck revealed a cystic lesion with irregularly calcified margins in the left lobe of the thyroid gland, as well as a highly vascularized internally heterogeneous mass with irregular margins located dorsally. We removed a spherical mass that was somewhat adherent to surrounding tissues from the inferior dorsum of the left thyroid gland lobe, as well as the left lobe itself. Intraoperative pathological diagnosis of the mass was an adenoma. After the operation, total thyroidectomy and cervical lymphadenectomy were performed based on a clinical diagnosis of parathyroid cancer. This case presented with a lack of characteristic clinical symptoms, it has re-emphasized the need for detailed preoperative imaging diagnosis and conscientious intraoperative observation.

Keywords: Parathyroid Cancer; iPTH; TI-Tc Subtraction Scintigraphic; Old Male

Introduction

Parathyroid disorders are seldom observed outside specialized endocrinology facilities. Complications of adult-onset diseases such as hypertension and diabetes have, however, increased the number of patients who require dialysis for renal dysfunction. This may result in secondary hyperparathyroidism which requires surgical removal of the hyper parathyroid glands. Accordingly, while benign parathyroid disorders are increasing, malignant parathyroid cancer is rare. This is a case report of parathyroid cancer, which required a differential diagnosis from a (presumably benign) adenoma.

Case Presentation

Patient: 69-year-old male.

Current medical history

The patient visited his local medical practitioner due to neck pain, which presented around February 2009. Non-enhanced MRI examination in the neck showed a mass in the left lobe of thyroid gland. The patient also presented with lower limb weakness, and was referred to our department. Intraoperative pathological diagnosis of the mass was an adenoma. After the operation, total thyroidectomy and cervical lymphadenectomy were performed based on a clinical diagnosis of parathyroid cancer. This case presented with a lack of characteristic clinical symptoms, it has re-emphasized the need for detailed preoperative imaging diagnosis and conscientious intraoperative observation.

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Surgical findings

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inferior dorsum of the left thyroid gland lobe, as well as the left lobe itself. Intraoperative pathological diagnosis of the mass was an adenoma. The weight of the parathyroid gland was 1200 mg.

**Histopathological findings**

The parathyroid tissue contained a nodule covered by a fibrous capsule. Various cells were observed, which contained round bodies and acidophilic or clear vacuoles, in the background of an angiofibromatous interstitium, which formed the solid structure of the mass. Capsular invasion was also observed (Figure 3).

An invasive, proliferative tumor, comprised of round cells similar to those observed in the parathyroid tissue, was observed in the thyroid tissue (Figure 4). Immunostaining showed Parathormone (PTH) to be positive in both parathyroid and thyroid tissue.

After the operation, total thyroidectomy and cervical lymphadenectomy were performed based on a clinical diagnosis of parathyroid cancer. Postoperative follow-up continues with no reoccurrence or metastasis observed to date.

**Discussion**

Primary hyperparathyroidism is almost always caused by an adenoma, followed by hyperplasia, cancer, and parathyroid cancer, which is rare [1]. Parathyroid cancer, however, is believed to present with characteristic clinical symptoms. According to reports by Okamoto et al. [2], these signs are as follows:

1) Palpable cervical mass
2) Development of Osteitis Fibrosa Cystica (OFC).
3) Serum calcium levels above 12 mg/dl.
4) Presentation with life-threatening conditions, including hypercalcemic crisis and acute pancreatitis.
5) Extremely high serum parathyroid hormone levels.
6) Ultrasonography showing a spherical rather than flattened mass, or with thyroid invasion.

In addition, they report the following intraoperative findings:

1) Parathyroid cancer is commonly spherical and indurated, exhibits a gray color and tends to be surrounded by a thick capsule.
2) There is a high likelihood of fibrous adhesion to the surrounding tissue or infiltrative growth.

This case showed no mass on palpation and no generalized metabolic derangements, such as osteitis. The serum calcium level was, however, high and ultrasonography showed a spherical rather than flat shape. The case thus warranted taking into consideration disorders other than an adenoma. There is a risk of disseminating cancerous cells to the surrounding tissues, and accordingly fine
needle aspiration is contraindicated. As a rule, the tumor must be excised en bloc with the surrounding tissues.

In the present case, we are a possibility of thyroid cancer; we were total thyroidectomy and neck lymph node dissection. Radiotherapy for parathyroid cancer was not done for effectively [3,4]. Concerted follow up is required in this case for this reason, as the likelihood of reoccurrence or metastasis is higher.

Although this case presented with a lack of characteristic clinical symptoms, it has reemphasized the need for detailed preoperative imaging diagnosis and conscientious intraoperative observation. Rapid intraoperative pathology diagnosis and rapid serum iPTH measurements are thought to contribute positively to making a discretionary diagnosis.

References