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Case Report

Incidental Parathyroid Adenoma: A Case Report

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Abstract

We report the case of parathyroid adenoma incidentally discovered during a total thyroidectomy. The patient showed no clinical or biochemical signs that led us to suspect a hyperparathyroidism condition before the operation. But a macroscopically enlarged parathyroid was discovered during the dissection and it was removed. The patients had a single adenoma confirmed by histological analysis. No permanent hypoparathyroidism or recurrent hyperparathyroidism was observed. We recommend that any enlarged parathyroid discovered during neck surgery should thus be removed to avoid the risks of future surgical procedures due to successive both of clinical hyperparathyroidism.

Keywords: Parathyroid adenoma, Incidental neo-plasm, Thyroidectomy.

INTRODUCTION

Currently, all patients with hyperparathyroidism are increasingly being discovered because of elevated serum calcium and low serum phosphorus levels. Less frequently, hyperparathyroidism is detected because of the onset of clinical manifestations (skeletal, renal, or gastrointestinal disease, hypertension).

In addition, there are a few patients who do not manifest either chemical or clinical hyperparathyroidism and who are only discovered incidentally during a thyroid operation (1.5%–4.5%) [1, 2].

Preoperative ultrasonography is useful for locating enlarged parathyroid glands, but its reliability for differentiating large parathyroid adenomas from those of the thyroid gland remains controversial, that was the case in our patient [3–6].

Questions remain as to whether or not such incidental enlarged parathyroid glands lead to the development of symptomatic hyperparathyroidism, and also regarding how many such patients will develop permanent hypocalcemia postoperatively. We herein report our experience in the treatment of incidental parathyroid disease identified during thyroid operations.

CASE REPORT

A 51-year-old patient presenting a GMHN presented as basicervical mass gradually increasing in volume, healthy-looking skin, rising on swallowing, the mass is firm, painless, poorly limited. Our patient was affected by only thyroid diseases and was free from preoperative hyperparathyroidism signs.

Cervical ultrasound showed a right thyroid lobe with a large nodule taking up the entire oval-shaped lobe, with regular outlines of isoechoic tissue echo structure containing colloid granulations measuring: 41 * 25 mm classified EU-TIRADS 4.

And the left thyroid lobe is the seat of an oval-shaped lower lobe nodule with regular, moderately hypoechoic contours measuring 48 * 17 mm classified EU-TIRADS 4, without detectable cervical ADP. The patient had no history of radiation treatment in the head or neck.

During the operation we discovered a large parathyroid adenoma at the expense of the left lobe, that

was not recognized in preoperative investigations. She underwent excision of enlarged parathyroid glands in association with the planned total thyroidectomy.

Fig-1: Ultrasound image showing the appearance of the thyroid nodule before surgery. (Arrow)

Parathyroid hormone level was found normal at 2 months. The patient didn't develop permanent hypoparathyroidism or recurrent hyperparathyroidism at 2 years follow-up after their operation.

DISCUSSION

It is generally recognized that the occurrence of clinical hyperparathyroidism in association with thyroid nodular disease is quite high (over 50% of patients treated for hyperparathyroidism based on our experience show goiter). It is preoperatively possible to plan the operation to obtain the cure for the two pathologic conditions. On the other hand, a small group of patients exists who develop the histologic parathyroid disease before demonstrating any alterations in the calcium and phosphorus levels or symptoms of hyperparathyroidism, and who are discovered in the course of an operation for thyroid benign or malignant disease. There have been not more than 50 cases of incidental hyperparathyroidism reported since the first case was published in 1937 [1, 2, 8]. Radiation to the neck is suspected to play a role in the pathogenesis of hyperparathyroidism and nodular thyroid disease (benign nodular disease or thyroid carcinoma) [9].

Previous studies have suggested that enlarged parathyroid found during a thyroid operation should always be removed [1, 8, 9] even if it is impossible to predict whether or not such incidental hyperparathyroidism leads to the development of true clinical hyperparathyroidism. The risk of recurrent hyperparathyroidism after excision of enlarged parathyroid glands (adenoma or hyperplasia) is very low: none of the 36 patients in the study of Katz and Kong [1], none of the 28 patients in the study of Carnaille *et al*., [8] and none of the eight patients in the series of Prinz *et al* [9].

The incidence of permanent hypoparathyroidism is also surprisingly low: none of the patients in the series reported by Carnaille *et al*.8 and Prinz *et al*.,[9] and 2 of the 36 (5.5%) patients in the study of Katz and Kong [1]. All of the patients in the series reported by Prinz *et al*. developed hypocalcemia [9], whereas in the study of Katz and Kong1 only 12 patients (33%) developed hypocalcemia and thus required calcium supplements. Nevertheless, we did not recognize any postoperative hyper- or hypo-parathyroidisme in the three cases reported herein. It is possible that the presence of subliminal hyperfunctioning parathyroid tissue does not induce a critical modification in the function of the other parathyroid glands, while excision of the adenomatous gland or hyperplastic glands can be easily tolerated in the hormonal response. We therefore strongly recommend that enlarged parathyroids found in the course of a thyroid operation should be removed, because the risk of developing into clinical hyperparathyroidism is considered to be unacceptable when compared with postoperative hypoparathyroidism, which is easily treated with calcium supplements.

CONCLUSION

As part of the assessment and optimal treatment of hyperparathyroidism, the doctor does not have solid evidence for a universally accepted management. Indeed, there is no meta-analysis of randomized controlled studies in this area (evidence A). A few studies, however, of an experimental type (evidence B), provide us with useful information to best advise patients, using recommendations from expert committees (evidence C).

The approach to be taken following the discovery of a parathyroid incidentaloma, responsible for primary hyperparathyroidism, is identical to that resulting from hypercalcemia linked to this endocrinopathy. In addition, the usefulness of a preoperative assessment remains debated, subject both to the experience of the doctors performing these examinations and to the cost involved. This should not be performed in a patient refusing surgery unless parathyroid ablation is planned by injection of a sclerosing product or more recently by laser. As often in medical and surgical pathology, experience and the skills of the surgeon are critical, as illustrated in the situation of the parathyroid incidentaloma discovered during the operation.

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