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Clinical course of incidental parathyroidectomy: Single center experience

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ABSTRACT

Objective: Thyroidectomy is a very common surgical procedure. Regardless of surgeon experience, incidental parathyroidectomy is a complication of thyroidectomy. The aim of this study was to identify the clinical course of incidental parathyroidectomies after thyroidectomy.
Methods: Patients who underwent thyroidectomy between January 2010 and June 2014 were evaluated retrospectively. Pathology reports were reviewed for the presence of parathyroid tissue in the thyroidectomy pathology specimens. Information regarding demographic, laboratory variables, operative details, and postoperative complications were collected.
Results: Incidental parathyroidectomy was found in 178 out of 3022 patients who had thyroidectomy (5.8%). Types of surgeries performed for 178 patients were total thyroidectomy (TT) in 132(74.2%) cases, TT and central lymph node dissection(CLND) in 30 (16.9%) cases, lobectomy in seven cases (3.9%), completion thyroidectomy in five (2.8%) patients and modified cervical lymph node dissection in four (2.2%)patients. One and two parathyroid glands were accidentally removed in 152 (85.3%) and 26 (14.7%) patients, respectively.

In the entire series, biochemical temporary postoperative hypocalcemia occurred in 75(42.1%) patients and permanent hypocalcemia occured in 12 (6.7%) patients with incidental parathyroidectomy. There was not a statistically significant difference regarding the occurrence of postoperative permanent hypocalcemia between the patients who had incidental parathyroidectomy of one gland and the patients with two incidental parathyroidectomies ($p = 0.114$).
Conclusion: Incidental parathyroidectomy is not uncommon during thyroidectomy. No association between inadvertent parathyroidectomy and postoperative permanent hypocalcemia was found.

1. Introduction

Thyroidectomy is a common, relatively safe surgical procedure. The main postoperative complications of thyroidectomy include injury to the parathyroid glands and to the recurrent laryngeal nerves. The reported incidence of symptomatic hypocalcemia after thyroidectomy ranges between 10–36%. Symptomatic hypocalcemia may be due to a variety of factors, such as injury, devascularization of the parathyroid glands, and accidental resection of parathyroid glands. Clinical relevance of incidental parathyroidectomy remains obscure [1–5].

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Table 1
Types of surgical procedures and histopathology of thyroid specimens where incidental parathyroidectomy has occurred.

Procedure	Incidental parathyroidectomy (n)	Total (n)
Total thyroidectomy	132 (5.2%)	2530
Total thyroidectomy and central lymph node dissection	30 (19.3%)	155
Thyroid lobectomy	7 (6.3%)	110
Completion thyroidectomy	5 (2.6%)	189
Modified cervical lymph node dissection	4 (10.5%)	38
Total	178	3022
Histopathology of thyroid		
Benign disease	112 (5.3%)	2112
Malignancy	66 (7.2%)	910
Total	178	3022

The aim of the present study is to analyze our experience regarding the incidence of incidental parathyroidectomy and its clinical course.

2. Materials and methods

A total of 3022 thyroidectomies were performed between January 2010 and June 2014 at the Ankara Numune Training and Research Hospital (Table 1). Thyroid malignancy was documented preoperatively by fine-needle aspiration biopsy.

Cases, where parathyroid tissue was sent separately for histologic evaluation for another reason, were not included in this study. The following data were recorded: gender, age, details of surgical procedures, histological findings, the number of parathyroid glands identified at the specimen, and postoperative symptomatic hypocalcemia (transient or permanent) (Table 2).

Table 2
Patient demographics, preoperative diagnosis, operative procedures, histological findings, and postoperative permanent hypocalcemia.

Variable	Number of patients (n)
Gender	
Male	152 (85.4%)
Female	26 (14.6%)
Age (years)	
Mean ± SD	47.7 ± 12.9
Range	14–79
Preoperative diagnosis	
Benign	122 (68.5%)
Malignant	56 (31.4%)
Procedure	
Total thyroidectomy	132 (74.2%)
Total thyroidectomy and central lymph node dissection	30 (16.9%)
Thyroid lobectomy	7 (3.9%)
Completion thyroidectomy	5 (2.8%)
Modified cervical lymph node dissection	4 (2.2%)
Final thyroid pathology	
Benign	112 (62.9%)
Malignant	66 (37.1%)
Incidental parathyroidectomy	
Intrathyroidal	30 (16.8%)
Extrathyroidal	148 (83.1%)

All thyroidectomy procedures were performed by surgeons with experience in thyroid surgery. Attempt to identify the recurrent laryngeal nerve was a routine policy. Suction drainage was used routinely. If inadvertent removal was recognized during surgery, removed parathyroid glands were autotransplanted. These cases were not included in this study.

Postoperative hypocalcemia was defined as permanent when parathyroid hormone was undetectable, or calcium or vitamin D supplementation exceeded 6 months postoperatively to treat clinical symptoms of hypocalcemia.

2.1. Statistical analysis

Comparisons were made for incidental parathyroidectomy and postoperative transient or permanent hypocalcemia. Univariate analysis was performed using a t test, and categorical values were determined using the χ^2 test. $p < 0.05$ was considered statistically significant.

3. Results

One hundred seventy-eight patients were identified with incidental parathyroidectomy out of 3022 patients (5.8%). 910 (30.1%) patients had thyroid malignancy and 2112 (69.9%) patients had benign thyroid disease out of these 3022 patients at final histopathologic examination. 112 (5.3%) patients who had benign thyroid disease and 66 (7.2%) patients who had thyroid malignancy, have incidental parathyroidectomy (Table 1). Types of surgical procedures performed for these 178 patients were total thyroidectomy (TT) in 132 (74.2%) cases, TT and central lymph node dissection (CLND) in 30 (16.9%) cases, lobectomy in seven cases (3.9%), completion thyroidectomy in five (2.8%) cases and modified cervical lymph node dissection in four (2.2%) cases (Table 1). Histopathologic examination of the resected thyroid specimens revealed the presence of benign thyroid disease in 112 (62.9%) cases and thyroid malignancy in 66 (37.1%) cases (Table 2). One and two parathyroid glands were accidentally removed in 152 (85.3%) and 26 (14.7%) patients, respectively. There were not any incidental removals of more than 2 parathyroid glands.

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