ABSTRACT

Objective/Hypothesis

Previous studies on complication rates of thyroid and parathyroid surgery focus on cases performed by general surgeons and fellowship-trained head and neck or endocrine surgeons. This study examines the complication rate of thyroid and parathyroid surgery performed by a non-fellowship-trained general otolaryngologist and compares it to rates reported by general surgeons and fellowship-trained endocrine surgeons.

Methods

We reviewed 96 cases of thyroidectomy and/or parathyroidectomy performed between 2002 and 2010 by a general otolaryngologist. Data collected included patient age, sex, ultrasound scans, fine needle aspiration results, surgical time, nerve monitor use, drain use, estimated blood loss, pathology, calcium levels, recurrence, vocal cord paresis, complications and mortality.

Results

We found comparable rates of hypocalcemia, vocal cord paralysis, scar formation and hematoma when compared to previously published studies. Nine patients (9.3%) had transient hypocalcemia and no patients developed permanent hypocalcemia. Nine patients had documented hematoma, which resolved in 12-48 hours. There were no instances of permanent vocal cord palsy. There were no instances of parathyroid insufficiency or myxedema, or of subcutaneous emphysema.

Conclusions

This study reports a favorable complication rate and supports the safety of thyroid and parathyroid surgery performed by a general otolaryngologist.

INTRODUCTION

Complications of thyroid and parathyroid surgery include metabolic derangements, superior and recurrent laryngeal nerve injury, infection, airway compromise and bleeding. Various factors have been implicated as risks for complications in thyroid and parathyroid surgery. Studies performed by general surgeons or fellowship-trained endocrine surgeons have suggested that surgeon volume, size of goiter, presence of thyroid carcinoma, stage of disease, and extent of resection may be related to risk of complications. In our series, a greater percentage of thyroid and parathyroid operations are being performed by otolaryngologists as opposed to general surgeons. This study examined the complication rate of thyroid and parathyroid surgery performed by a general otolaryngologist who performs, on average, 12 cases per year over an eight year period. This study was completed in order to provide further guidance as to the safety of thyroid and parathyroid surgery performed by a general otolaryngologist.

MATERIALS AND METHODS

After obtaining approval from the institutional review board, we performed a retrospective chart review of patients who underwent thyroidectomy and/or parathyroidectomy by Dr. Erich Voigt at the New York Otolaryngology Institute and the Department of Otolaryngology/Head & Neck Surgery at Weill Cornell Medical College between January 2002 and September 2010. Patients all had at least one postoperative visit. Information such as diagnosis, type of surgery performed, age, sex, pathologic diagnosis, surgical time, use of nerve monitor, use of drains, estimated blood loss, parathyroid hormone levels, preoperative and postoperative calcium levels, calcium and vitamin D supplementation, readmission, recurrence, vocal cord paresis, complications and mortality were recorded.

RESULTS

There were 34 hemithyroidectomies, 6 completion thyroidectomies, 50 total thyroidectomies, 5 parathyroid explorations for primary hyperparathyroidism and 4 four gland exploration for primary hyperparathyroidism. Fourteen (14.6%) of 96 operations included a neck dissection. Thirteen (13.5%) of 96 operations included mediastinal involvement. Parathyroid tissue was replanted in 53 cases. Nine cases used nerve monitoring.

CONCLUSION

We believe the number and scope of operations as well as extent of resections included in this study encompasses the typical caseload of a general otolaryngologist. This study lends support to the safety of thyroid and parathyroid surgery by a general otolaryngologist who performs on average 12 cases per year. Further studies directly comparing surgeons in different specialties who perform similar number of cases per year will add further support to the safety of surgery by general otolaryngologists.

REFERENCES


DISCUSSION

Reported rates of temporary recurrent laryngeal nerve paralysis with thyroidectomy range from 0.5 to 8.9%.[3] We had one reported case of temporary recurrent laryngeal nerve paresis (1.0% of patients or 0.7% of nerves at risk), which was within the range of reported averages. Rates of permanent recurrent laryngeal nerve paralysis reportedly range from 1.2 to 5.2% of cases.[3] Our one case of permanent recurrent laryngeal nerve paralysis occurred as a result of deliberate sacrifice of the nerve due to tumor involvement. There were no instances of inadvertent permanent vocal cord paralysis.

Temporary hypocalcemia occurs in a reported average of 3% to 25% of all thyroidectomy cases while permanent hypocalcemia occurs in 6.8% to 97% of all cases.[3-5] In our study, 9 of 96 (9.4%) patients experienced temporary hypocalcemia and no patients experienced permanent hypocalcemia. Our rate of temporary hypocalcemia was within reported averages while our rate of permanent hypocalcemia was less frequent than reported rates of 6.8% to 97% of all cases.[3-5]

There was only 1 (1.0%) incidence of hematoma which was evacuated in the operating room. This compares favorably with reported hematoma rates of 0.5 to 5.1% for all thyroidectomy cases.[3-5] Two patients developed keloid scars which were treated with keloid injections and vitamin A and D ointment. No chyle leaks or airway complications occurred.

Our study included a series of extensive operations, as more than half of reported cases were total thyroidectomies with 14.6% of them involving a neck dissection and 13.5% of cases involving subtotal resection. The most common pathology finding was benign disease, which was discovered in 68 of 96 cases, or 70.8%. The next most common pathologic diagnosis was papillary thyroid cancer, which constituted 25% of 96, or 26.0% of cases. There was one case each of follicular, medullary, and parathyroid carcinoma.