

ORIGINAL RESEARCH

Assessment of post- operative complications in patients undergoing benign nodular thyroid surgery

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ABSTRACT

Background: Benign nodular goiter is the most common endocrine disorder requiring surgical treatment, especially in places with a high prevalence of iodine deficiency worldwide. The present study was conducted to assess post- operative complications in patients undergoing benign nodular thyroid surgery.

Materials & Methods: 110 patients who underwent benign nodular thyroid surgery of both genders were enrolled and parameters such as operation techniques applied and complications were recorded.

Results: Out of 110 patients, males were 45 and females were 65. Type of surgery performed was lobectomy + isthmectomy in 10, near total thyroidectomy in 54, total thyroidectomy in 30, bilateral subtotal thyroidectomy in 16 patients. The difference was significant ($P < 0.05$). Common complications were temporary hypoparathyroidism in 35, flap edema in 11, temporary recurrent laryngeal nerve injury in 5, permanent recurrent laryngeal nerve injury in 6, seroma in 3 and hematoma in 2 cases. The difference was significant ($P < 0.05$).

Conclusion: Common complications were temporary hypoparathyroidism, flap, temporary recurrent laryngeal nerve injury, permanent recurrent laryngeal nerve injury, seroma and hematoma.

Key words: recurrent laryngeal nerve injury, benign nodular thyroid, Complications

INTRODUCTION

Thyroid nodules are common in peoples and palpable thyroid nodules are present in 4% to 7% of the adult population. Recent studies have demonstrated a high prevalence of benign nodular thyroid disease.¹ Benign nodular goiter is the most common endocrine disorder requiring surgical treatment, especially in places with a high prevalence of iodine deficiency worldwide. Surgery on the thyroid gland has usually been reserved for patients with goiters accompanied by obstructive manifestations, failed medical management, cosmetic problems and any clinical suspicion of malignant neoplasia.²

The role of total thyroidectomy or lobectomy in benign thyroid disease is controversial. The main concern is the potentially high rate of complications such as permanent recurrent laryngeal nerve (RLN) paralysis and hypoparathyroidism.³ Postoperative bleeding may be a devastating complication of thyroid surgery as an unrecognized or rapidly expanding hematoma can cause airway compromise and asphyxiation. The rate of incidence of postoperative bleeding varied from 0.4% to 1.1%.⁴ Temporary and permanent vocal palsy rates were analyzed in many reports and the overall incidences of temporary and permanent

vocal palsy were 5.1% and 0.9%, respectively. However, the risk of reoperation for recurrent benign thyroid disease is greater than the risk associated with total thyroidectomy as the initial surgical procedure.⁵ Recently, total thyroidectomy or lobectomy has increasingly been used for the management of benign thyroid disease. A low complication rate can be achieved with the use of a meticulous surgical technique, i.e. identifying RLNs and preserving the blood supply of parathyroid glands.⁶ The present study was conducted to assess post-operative complications in patients undergoing benign nodular thyroid surgery.

MATERIALS & METHODS

The present study comprised of 110 patients who underwent benign nodular thyroid surgery of both genders. All were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. was recorded. Parameters such as operation techniques applied, the experience of the operating team, the amount of postoperative drainage, the size of the thyroid gland, the location of the gland, the operation duration and complications were recorded. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 110		
Gender	Males	Females
Number	45	65

Table I shows that out of 110 patients, males were 45 and females were 65.

Table II Type of surgery

Approach	Number	P value
Lobectomy + isthmectomy	10	0.05
Near total thyroidectomy	54	
Total thyroidectomy	30	
Bilateral subtotal thyroidectomy	16	

Table II shows that type of surgery performed was lobectomy + isthmectomy in 10, near total thyroidectomy in 54, total thyroidectomy in 30, bilateral subtotal thyroidectomy in 16 patients. The difference was significant (P< 0.05).

Table III Assessment of complications

Complications	Number	P value
Temporary hypoparathyroidism	35	0.02
Flap edema	11	
Temporary recurrent laryngeal nerve injury	5	
Permanent recurrent laryngeal nerve injury	6	
Seroma	3	
Hematoma	2	

Table III, graph I shows that common complications were temporary hypoparathyroidism in 35, flap edema in 11, temporary recurrent laryngeal nerve injury in 5, permanent recurrent laryngeal nerve injury in 6, seroma in 3 and hematoma in 2 cases. The difference was significant (P< 0.05).

DISCUSSION

There are strong arguments in favor of surgery for the treatment of hyperthyroidism (Graves' disease, toxic nodular goiter or solitary toxic nodule). Antithyroid drugs do not provide long-term remission from the disease and may have serious side-effects.⁷ Large multiple doses of radioactive iodine are necessary to control hyperthyroidism in patients with a large-size goiter or toxic multinodular goiter because they have a lower uptake of radioactive iodine than patients with Graves' disease.⁸

When irreversible damage occurred for recurrent laryngeal nerve (RLN), usually patients presented with marked voice dysfunction changes especially in quality as it is a complication that could be happened following thyroid surgery.⁹ Many surgeons studied these complications and found ranges from 0.5 to 5% following thyroidectomy with increased incidence in both recurrent goiter and total thyroidectomy especially with cancer thyroid. Hypoparathyroidism is another feared complication of thyroid surgery.¹⁰ It may be due to direct trauma to the parathyroid glands, devascularization of the glands, or actual removal of the glands during the thyroid surgery. The reported incidence varies between 0.4 and 13.8% and is directly correlated to the extent of thyroidectomy.¹¹ The present study was conducted to assess post-operative complications in patients undergoing benign nodular thyroid surgery.

We found that out of 110 patients, males were 45 and females were 65. Type of surgery performed was lobectomy + isthmectomy in 10, near total thyroidectomy in 54, total thyroidectomy in 30, bilateral subtotal thyroidectomy in 16 patients. Celik et al¹² identified the factors influencing the complications in benign nodular thyroid surgery. A total of 332 patients who underwent thyroid surgery were evaluated retrospectively to identify the factors influencing the complications. They found that in surgery lasting more than 90 minutes the risk of permanent recurrent laryngeal nerve (RLN) injury was high, daily drainage more than 50 cc increases the risk of seroma formation, retrosternal goiter surgery has higher risk for bleeding. The flap edema rates were high found in the operations made by resident surgeon and patients with size 3–4 thyroid glands. Low complication rates can be achieved after thyroidectomy with better knowledge of the surgical anatomy of the neck, thyroid pathology and required surgical treatment.

We found that common complications were temporary hypoparathyroidism in 35, flap edema in 11, temporary recurrent laryngeal nerve injury in 5, permanent recurrent laryngeal nerve injury in 6, seroma in 3 and hematoma in 2 cases. Alharbi et al¹³ evaluated the risks and complication rate of thyroid surgery in 310 patients. Three major complications of thyroid surgery were haemorrhage, recurrent laryngeal palsy, and permanent hypoparathyroidism with varying rates of incidence. Haematoma can cause airway compromise and. In the present study we obtained 31 patients with the three most common complications (9.6%) and this figure is more or less similar with other reported data of the interest.

Dener et al¹⁴ assessed the safety of total thyroidectomy or lobectomy in benign thyroid disease. During a 5-year period, 102 patients were operated on for benign thyroid disease, including multinodular goiter, solitary nodule, toxic nodular goiter and Hashimoto's thyroiditis. Recurrent laryngeal nerves were routinely investigated during dissection. Total thyroidectomy was performed in 27 cases, unilateral total lobectomy with isthmectomy in 38 and unilateral total, contralateral subtotal lobectomy in 37. One (0.9%) temporary superior laryngeal nerve palsy, 1 (0.9%) temporary recurrent nerve palsy and 1 (0.9%) temporary hypoparathyroidism occurred. Wound seroma developed in 2 patients (1.9%). There were no deaths or permanent complications. Debry et al¹⁵ found that chronic hypoparathyroidism with unrecovered normal function after six months was reported in 1.4% of cases and seen in more extensive type of surgery.

The limitation of the study is small sample size.

CONCLUSION

Authors found that common complications were temporary hypoparathyroidism, flap, temporary recurrent laryngeal nerve injury, permanent recurrent laryngeal nerve injury, seroma and hematoma.

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