

Prospective Analysis of Thyroidectomy Cases in a Tertiary Care Hospital

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Abstract

Introduction: The incidence of thyroid disorders is on the rise. The preferred treatment for most of the thyroid conditions is total thyroidectomy. The associated complications are transient hypocalcemia, recurrent laryngeal nerve palsy, and post-operative hematoma.

Objective: The objective of this study is to find out the causes of thyroidectomy and their post-operative complications.

Materials and Methods: This is a prospective study conducted over a period of 1 year 6 months (May 2015–November 2017) at the Department of Surgery, Maheshwara Medical College and Hospital, Hyderabad.

Results: The rates of thyroidectomy are increasing. They are common among women and mostly following Graves' disease, nodular goiter, and malignancy. Subtotal thyroidectomy has decreased hypoparathyroidism or nerve injury. However, second look surgeries in cases of recurrence have significantly increased complication rate. Total thyroidectomy is a safe and effective alternative when performed skillfully.

Key words: Goiter, Malignancy, Thyroid, Thyroidectomy

INTRODUCTION

The incidence of thyroid disorders has risen by 20% over the past decade. It is an endocrine organ that produces hormones to regulate metabolic activities of the body. Thyroid disorders could be Benign: Thyroiditis, goiter, thyroid adenoma, or malignant. The management is by thyroidectomy, which requires careful ligation of superior and inferior thyroid artery to prevent damage of nerves. Despite complications, total thyroidectomy is still preferred as it reduces recurrence. There are controversies regarding the safety of the procedure, amount of gland to be respected, fear of morbidity associated with thyroidectomy. Addressing these becomes important as thyroidectomy procedures are being performed routinely nowadays. With increasing rates of thyroidectomy

surgeries and their possible complications, this study was undertaken to evaluate the common causes for the surgery and their associated morbidity.

MATERIALS AND METHODS

This is a retrospective analytical study conducted at the Department of General surgery, Maheshwara Medical College and Hospital, Hyderabad. The study was conducted over 1 year 6 months from May 2015 to November 2016. The study group included patients who were admitted with thyroid disorders. Patients who had swelling of the neck due to other causes were excluded from the study after confirming the diagnosis.

These patients were evaluated with a detailed history, thyroid profile, history of drug intake, history of previous surgeries or radiation, imaging studies of the neck, fine-needle aspiration cytology of thyroid swelling, and complete hemogram. After evaluation, patients requiring surgery were assessed for fitness for surgery; informed written consent was obtained and proceeded with surgery. Specimen sent for histopathological confirmation of diagnosis. They were followed up until their discharge

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and reviewed at outpatient department. They were also advised thyroid supplementation or suppressive therapy as required.

RESULTS

During the study period, a total of 125 patients were admitted with complaints of neck swelling. On evaluation, 120 of them had thyroid disorders, and 113 cases were managed with thyroidectomy [Tables 1-5].

DISCUSSION

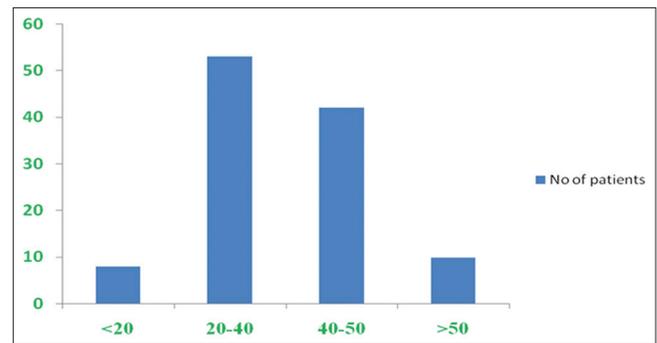
Thyroid gland disorders are a challenge to management medically or surgically. The common diseases affecting

thyroid gland are goiter, hypothyroidism, hyperthyroidism, thyroiditis, and malignancy. The preferred surgical management for these conditions would be total thyroidectomy. Among various thyroidectomy procedures, 40% are done for malignancy and 60% are done for benign conditions. The malignancies that are commonly encountered are papillary carcinoma of thyroid in about 80% cases. The other malignancies are follicular carcinoma, anaplastic carcinoma, and small cell carcinoma.

Nearly 67% of thyroidectomies were performed on women. This is similar to Der *et al.* study^[1] which showed increased incidence among women.

Table 1: Patient demographics

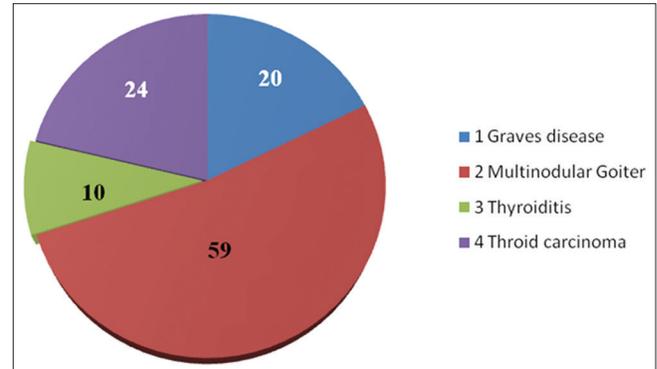
Patient demographics (n=113)	Number of patients
Sex of the patient	
Male	44
Female	69
Age of the patient	
<20	8
20-40	53
40-50	42
>50	10



Graph 1: Patient demographics

Table 2: Causes of thyroidectomy

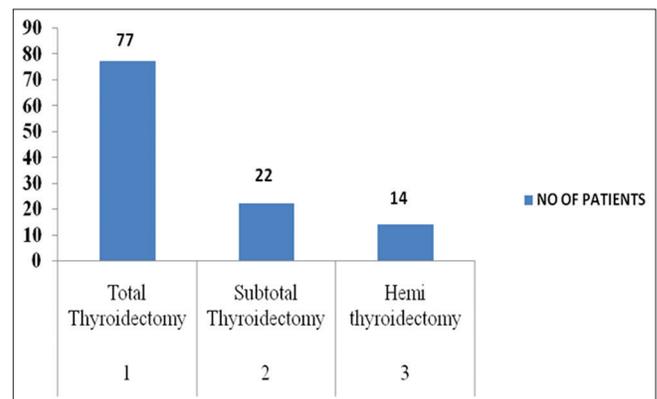
Causes of thyroidectomy	Number of patients
Graves' disease	20
Multinodular goiter	59
Thyroiditis	10
Thyroid carcinoma	24



Graph 2: Causes of thyroidectomy

Table 3: Types of thyroidectomy

Types of thyroidectomy	Number of patients
Total thyroidectomy	77
Subtotal thyroidectomy	22
Hemithyroidectomy	14



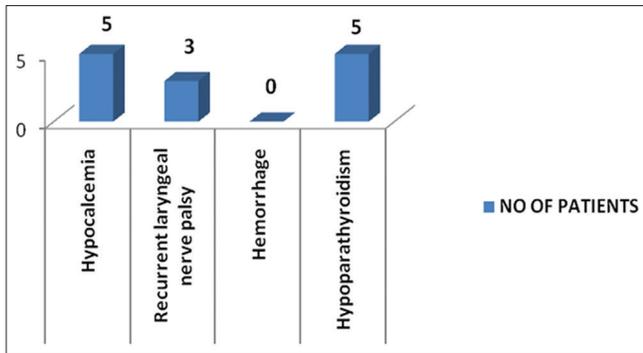
Graph 3: Types of thyroidectomy

Table 4: Incidence of complications

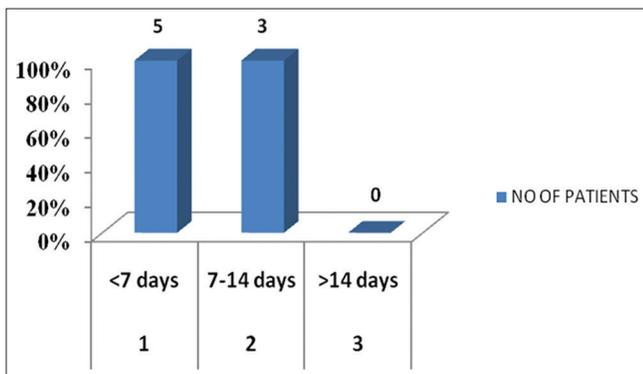
Incidence of complications	Number of patients
Hypocalcemia	5
Recurrent laryngeal nerve palsy	3
Hemorrhage	0
Hypoparathyroidism	5

Table 5: Duration of stay in post-operative period

Duration of stay in post-operative period	Number of patients
<7 days	5
7-14 days	3
>14 days	0



Graph 4: Incidence of complications



Graph 5: Duration of stay in post-operative period

Katz and Bronson^[2] study showed that the indications for thyroid disorders were 19% Graves' disease, 62% nodules, and 19% malignancy of thyroid glands such as papillary carcinoma, medullary carcinoma, follicular carcinoma, and anaplastic carcinoma. Similarly, in our study, the indication for thyroidectomy was Graves' disease in 15%, nodular goiter in 56%, malignancy in 17%, and thyroiditis in 12%.

In our study, the incidence of hypoparathyroidism following thyroidectomy is 5%. This is found to be significantly higher as compared to Gough and Wilkinson^[3] study had an incidence of 0.7% hypoparathyroidism and 2.2% recurrent laryngeal nerve palsy following total thyroidectomy. Jessie and Harrison^[4] study had 5–71% incidence of transient hypoparathyroidism and 0–3.5% of permanent hypoparathyroidism.

Thyroidectomy surgeries are the most common cause of vocal cord injury. This occurs due to temporary (15.5–23.6%) or permanent (2.6–15.5%) damage to the recurrent laryngeal nerve.^[2] In our study, the nerve injury occurred in 2% of patients. To avoid the risk of

damage, accurate exposure of nerve by careful dissection is necessary. Comparatively, the risk of hypoparathyroidism and recurrent laryngeal nerve palsy is common with total thyroidectomy. Nerve injury when temporary has a rapid recovery which is beneficial for the patient. Nerve injury could be due to other causes such as the use of laryngoscope during intubation, pressure caused by a cuffed tube, overstretching of the nerve while positioning the patient with hyperextended neck.^[5] These factors also need to be addressed to reduce the nerve damage.

All patients operated with thyroidectomy were discharged in good condition. There were no post-operative deaths. This shows that thyroidectomy is a safe and effective procedure when performed cautiously.

Subtotal thyroidectomy has reduced incidence of complications but increased risk of recurrence. As complications are more common in second-look surgeries, it is preferable to perform total thyroidectomy Graphs 1-5.

CONCLUSION

Thyroid disorders are commonly manifesting endocrine disorders among South Indian population. As a result, the total thyroidectomy rates are on the rise. This is a safe and effective procedure when performed by the expert surgeon. In a subtotal thyroidectomy, the risk of recurrence overweighs the reduced rate of complications.

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