

Analysis of Thyroid Cases in a Teaching Hospital

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Abstract

Background: Hyperthyroidism, hypothyroidism, inflammation of thyroid (thyroiditis), thyroid enlargement (goitre), thyroid nodules and thyroid cancer are amongst the thyroid disorders. The study aims to the occurrence of various post-operative complications following thyroidectomy. **Subjects and Methods:** One hundred patients who underwent thyroid surgery, for various thyroid disorders were taken for the study. elaborate analysis of those patients who underwent thyroidectomy was done relating to numerous aspects like age, sex, diagnosis & indication for surgery, type of thyroidectomy procedure done, incidence of individual complications. **Results:** About 37% of the patients were diagnosed with multinodular goiter, followed in frequency by solitary thyroid nodule (27%) and Follicular adenoma (11%). Malignancy (both follicular in 3 patients and papillary in 7 patients) was diagnosed in total 10 Patients out of 100. Three cases each of Diffuse colloid goiter and Primary thyrotoxicosis. **Conclusion:** Careful assessment of surgical and medical therapeutic methods can still minimize the complications and repetition of thyroid surgery.

Keywords: Thyroid Cases, Lobectomy, Thyroidectomy, Complications

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Introduction

The thyroid is an endocrine gland found in the neck that produces hormones. The thyroid hormones thyroxine (T4) and triiodothyronine (T3) have a strong effect on energy metabolism, temperature control and the production of body heat. Thyroid hormone also plays an important role in memory, sleep, skeletal muscles and heart contraction.

In clinical practice, thyroid abnormalities are often found. These entail physiological disorders, such as overproduction (hyperthyroidism) and thyroid hormone underproduction (hypothyroidism) due to inherent thyroid conditions, and the occurrence of pathological anomalies such as goiter (thyroid gland enlargement), adenoma or carcinoma, Thyroiditis (swelling of the thyroid).

Thyroid conditions are the most common cause of metabolic disturbances, Surgery is the mainline treatment for many thyroid swellings. Patients that experience conditions such as chronic hypocalcaemia and recurrent laryngeal nerve damage have a reduced quality of life and increased health expenses, and often need prolonged replacement therapy, additional surgical intervention and rehabilitation.^[1] Complications of thyroidectomy are related to disease type, extent of disease,

removal procedures, surgeon training and experience.^[2-5]

The purpose of this study is to figure out the various thyroid conditions and complications following different thyroidectomy procedures and postoperative complications with the timely care institution to minimize morbidity and provide the patient with the best result.

Subjects and Methods

Place of Study: Department of Surgery, Bhaskar medical college and General hospital.

Type of Study: This was a randomized prospective study

Sample size : 100 Patients.

Sampling Methods: Consecutive sampling.

Inclusion Criteria

Patients admitted and positively diagnosed thyroid swellings requiring surgical treatment and willingness to undergo surgery, as well as patients who underwent thyroidectomy and followed up for 6 months after discharge was included in the study.

Exclusion Criteria

Thyroidectomy cases with chronic thyroid disease, concomitant dissection of the lymph node and hyperparathyroidism, and patients who have undergone thyroidectomy and have not followed up.

Statistical Analysis

Data were presented in the form of statistical Tables and charts. SPSS software version 20 was used for statistical analysis.

Ethical Approval

Approval was taken from the Institutional Ethics Committee prior to commencement of the study.

One hundred patients who underwent thyroid surgery, for numerous thyroid disorders were taken for the study. elaborate analysis of those patients who underwent thyroidectomy was done relating to numerous aspects like age, sex, diagnosis & indication for surgery, type of thyroidectomy procedure done, incidence of individual complications, variety of intervention and patient outcome, period of keep and follow-up.

Results

Table 1: Distribution of thyroid cases according to the age and gender

Sex	No. of cases	Percentage
Female	90	90%
Male	10	10%
Age group (years)		
11-20	10	10%
21-30	31	31%
31-40	27	27%
41-50	21	21%
51-60	7	7%
61-70	3	3%
71-80	1	1%
Total	100	100%

In our study, Majority of them were females accounting 92% and males were only 8% .Most of the patients around 31% belonged to the third decades of life i.e. 21 – 30 yrs. , followed by 27% belonging to fourth decade of life i.e. 31 – 40 yrs. and 21% belonging to the fifth decade of life i.e. 41 – 50 yrs. age group. Least number of cases were seen in extremes of age group of 51 – 60 yrs with 7%, 61 – 70 yrs with 3%. & 71 – 80 Years group with 1%.

About 37% of the patients were diagnosed with multinodular goiter, followed in frequency by solitary thyroid nodule (27%) and Follicular adenoma (11%).Malignancy (both follicular in 3

Table 2: Histopathology of thyroid cases

Diagnosis	No. of cases	Percentage
Solitary thyroid nodule	27	27%
Multinodular goiter	37	37%
Diffuse colloid goiter	3	3%
Primary thyrotoxicosis	3	3%
Hashimoto's thyroiditis	9	8%
Papillary carcinoma	7	6%
Follicular carcinoma	3	4%
Follicular adenoma	11	11%

patients and papillary in 7 patients) was diagnosed in total 10 Patients out of 100. Three cases each of Diffuse colloid goiter and Primary thyrotoxicosis.

The commonly performed procedure in our study was Lobectomy (including both right & left) and it was done in 40% of the cases followed by Subtotal thyroidectomy was the second most commonly performed procedure and was done in 28% of the cases. Near total thyroidectomy was done in 11% of the cases. Total thyroidectomy was done in 15% of the cases. Parathyroidgl and auto transplantation was done in 5% of the cases. Berry picking of lymph nodes was done in 1% of the cases.

Hypocalcemia was the most commonly observed post-operative complication in our study and was observed in 18% of the cases. Wound infection was the second most common complication and was seen in 5% of the cases. The incidence of haematoma at surgical site was 3%. RLN paralysis seen in 2% of the cases. Seroma formation was observed in 3% of the cases. Bleeding, thyrotoxic storm hypothyroidism recurrent hyperthyroidism and hyper trophicscar/keloid were not observed as post-operative complications in any of the patients studied.

Discussion

In our study, the minimum patient age was found to be 15 years and the maximum age was 72 years. Taking incidence of sex, the male: ratio of females was 2:8. In series Stojadinovic the ratio is 2:8 and in series Shandilya7 the ratio is 2.3:7.7. [6]

Table 3: Types of thyroidectomy procedure done on thyroid cases

Procedure	No. of cases	Percentage (%)
Total thyroidectomy	15	15%
Total thyroidectomy +parathyroid auto transplantation	5	5%
Total thyroidectomy + Berry picking of lymph nodes	1	1%
Near total thyroidectomy	11	11%
Subtotal thyroidectomy	28	28%
Lobectomy	40	40%

Table 4: Post-operative complications observed in thyroidectomy cases

Post-operative complication	No. of cases	Incidence (%)
Haematoma	3	3%
Hypocalcemia	18	18%
RLN paralysis	2	2%
Seroma	3	3%
Wound infection	5	5%

The different complications evaluated were paralysis of the Recurrent Laryngeal Nerve [RLN] and Supra Laryngeal Nerve [SLN], hypoparathyroidism, hypothyroidism, thyrotoxic storm, bleeding, hematoma formation, seroma, wound infection, recurrent hyperthyroidism, hypertrophic scar / keloid.^[7]

In our study, the incidence of multinodular goiter was found to be 37%, followed in frequency by solitary thyroid nodule (27%) and Follicular adenoma (11%). Malignancy (both follicular in 3 patients and papillary in 7 patients) was diagnosed in total 10 Patients out of 100. Three cases each of Diffuse colloid goiter and Primary thyrotoxicosis.

In previous studies lobectomy and total thyroidectomy done by Rix^[8] 76.1% and 23.8%, Quiros^[9] 22.2% and 62.5%, Sasson^[10] 51% and 49%.

The most common causes were either inadvertent removal of parathyroid gland or injury to its vascular supply. All the cases observed were of transient nature and no case of permanent hypoparathyroidism occurred in study. The incidence of wound hematoma was 3 % and wound infection was 5% respectively in the present study.

In various studies RLN paralysis was recorded by Bhat-tacharya^[11] - 0.77%, Steurer^[12] - 0.26%, Erbil^[13] 1.8%, Chow^[14] 2.0%, Richmond^[15] 1.33%

In previous studies hypocalcemia was recorded by Bhat-tacharya^[11] - 6.2%, Steurer^[12] - 2.0%, Erbil^[13] - 6.6%, Richmond^[15] - 13%, Sasson^[16] - 6.0%, Palazzo^[17] - 9.8%, Lam^[18]

- 30%, Page^[19] - 35%, Testa^[20] - 20%

In this study there were no incidences of bleeding, thyrotoxic storm and other less common complications including Horner's syndrome, tracheal perforation, chronic hyperthyroidism, chyle fistular, hypothyroidism, hypertrophic scar / keloid etc. The occurrence of post-operational complications following thyroidectomy has declined steadily, due to a better understanding of thyroid gland anatomy, improved strategies for hemostasis, RLN dissection and monitoring and preservation of parathyroid glands. Furthermore, proper treatment following surgery to detect early complications and to rapidly administer corrective therapy plays an important role in minimizing the length of hospital stay and decreasing patient morbidity.

Conclusion

Careful assessment of surgical and medical therapeutic methods can still minimize the complications and repetition of thyroid surgery, with more precise surgical indications a comprehensive knowledge of the surgical anatomy, a robust operation procedure, a systematic dissection of recurrent larynx nerve, and parathyroid gland and careful diagnosis.

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