

Clinical Complications Post Thyroidectomy

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Abstract

Background: One of the most commonly conducted operations by a general surgeon are thyroid surgeries. Many complications of thyroid operation are linked to metabolic disturbances or a recurrent laryngeal nerve injury. Superior laryngeal nerve injury, inflammation, weakness of airways and bleeding are other risks. **Subjects and Methods:** This randomized retrospective sample consists of 50 successive patients who undergo various thyroidectomy procedures and who meet the inclusion criteria after having been introduced to OPD. **Results:** Post-operative complications following thyroidectomy was seen in 30% of the patients with Hypocalcemia being one of the most prevalent complications postoperatively observed in 18% of the patients followed by wound infection seen in 6% of the cases studied. The frequency of hematoma at the surgical site was 2%. Recurrent Laryngeal Nerve paralysis seen in 2% of the cases and Seroma formation was reported in one individual constituting 2% of the cases. **Conclusion:** Effective patient surgical control is important and assists in the early detection and treatment of such complications. Careful post-operative patient monitoring ensures quick intervention and helps the patient to achieve better results.

Keywords: Thyroidectomy, Recurrent Laryngeal Nerve (RLN), Hypocalcemia, Paralysis

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Introduction

Thyroidectomy is a common procedure with an extremely low mortality rate.^[1] It is correlated with different morbidities linked to the surgeon's experience, but very low surgical morbidity levels are recorded for thyroidectomy.^[2] Thyroid surgery is associated with few complications and no fatality. Postoperative hemorrhage, respiratory obstruction, hyperthyroid storm hypoparathyroidism and laryngeal nerve injuries are the major complications. Postoperative risks may be as minor as flap edema or as severe and life threatening as hemorrhage or respiratory obstruction. They can be prevented by way of a safe protocol and a successful preoperative planning.

Patients of problems including chronic hypocalcemia and recurrent laryngeal nerve damage have a decreased quality of life and increased cost of treatment. Lifelong replacement therapy, additional procedures and rehabilitation are often needed.^[3] Laryngeal nerve injury is another potentially serious complication of thyroidectomy. Permanent unilateral recurrent laryngeal nerve (RLN) paralysis manifests clinically as hoarseness, weakness, and breathiness of the voice, and occurs in 0% to 3.6% of patients who have undergone thyroidectomy. Thyroidectomy complications have been related to disease type,

disease severity, removal methods, the surgeon's training, and experience;^[4-7] and a number of studies have shown, increase in surgeon experience correlate with decrease in post-thyroid complications.^[8]

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 Collection: 50 Patients.

Sampling Methods: Consecutive sampling.

Inclusion Criteria

Patients admitted and positively diagnosed as having thyroid swellings requiring surgical management and willing for surgery and Patients who underwent thyroidectomy and attended follow up for 1 year after discharge.

Exclusion Criteria

- Thyroid swelling patients with an already damaged RLN detected by pre-operative IDL test.

- Patients suffering from thyroidectomy due to chronic thyroid disease, concomitant dissection of the lymph node and hyperparathyroidism.
- Patients who have undergone thyroidectomy and have been unavailable for follow-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.

Patients were monitored from the time of diagnosis until the time of hospital discharge, and then followed up in the OPD at an interval of 3 months during the study period.

A thorough history was elicited followed by a complete physical examination. elaborate analysis of those patients who underwent thyroidectomy was done. All patients were subjected to essential biochemical and haematological investigations.

If thyroid enlargement is massive or retrosternal and if the patient shows clinical signs of respiratory embarrassment or superior vena caval obstruction, a CT scan of the neck and thoracic inlet will indicate the possible need to enter the chest and potential problems that may be encountered on intubation.

Results

Table 1: Distribution According To Sex

Sex	No. of cases	Percentage
Female	46	92 %
Male	4	8 %

Thyroidectomy was done in 50 patients .with majority being female constituting 92% and the least being males 8%. It shows the prevalence of thyroid is more in females when compared to males.

Lobectomy (including both right and left) was the commonly performed procedure in our research and was conducted in 20 out of 50 cases (40%).The second most common procedure was sub-total thyroidectomy was performed in 15 cases (30%). In 3 cases near total thyroidectomy (6%), in 9 cases total thyroidectomy was performed (18%).Autotransplantation of the parathyroid gland was performed in 2 cases (4%). Berry picking of lymph nodes was done in one case (2%).

Hypocalcemia was one of the most prevalent complications postoperatively observed in 18% of the patients followed by wound infection seen in 6% of the cases studied. The

Table 2: Operative Procedure Done

Procedure	No. of cases	Percentage
Lobectomy	20	40%
Total thyroidectomy	9	18%
Total thyroidectomy + Parathyroid autotransplantation	2	4%
Total thyroidectomy+Berry picking of lymph nodes	1	2%
Near total thyroidectomy	3	6%
Subtotal thyroidectomy	15	30%

Table 3: Incidence of Post-Operative Complications

Post-operative complication	No. of cases	Incidence in percentage
Hypocalcemia	9	18%
Bleeding	-	-
Wound infection	3	6%
Haematoma	1	2%
Seroma	1	2%
RLN paralysis	1	2%
SLN paralysis	-	-
Respiratory obstruction	-	-
No complaints	15	30%

frequency of hematoma at the surgical site was 2%. Recurrent Laryngeal Nerve paralysis seen in 2% of the cases and Seroma formation was reported in one individual constituting 2 % of the cases.

Post-operative complications following thyroidectomy was seen in 30% of the patients.

In the follow up for post thyroidectomy complications haematoma was seen in 1 patient it was relieved in 1 day, seroma was relieved within 3 days of thyroidectomy procedure and wound infections following post thyroidectomy seen in 3 patients were cured within a week. The patients who had developed Recurrent Laryngeal Nerve Paralysis and hypocalcemia were relieved in span of 3 months.

Table 4: Evaluation of All Patients at Follow-Up

Complaint	No. of cases	Duration
Hematoma	1	Relieved within 1 day
Seroma	1	Relieved within 3 days
Wound infection	3	Relieved within 1 week
RLN paralysis + hypocalcemia	1	up to 3 months
Hypocalcemia	9	up to 3 months

Discussion

Fifty thyroidectomy patients have been examined to determine the incidence of multiple early postoperative complications after surgery. Females were predominant with 92% and males were only 8%.

Lobectomy (including both right and left) was the most commonly performed procedure in our study and was done in 20 cases (40%). The second most common procedure was sub-total thyroidectomy was performed in 15 cases (30%). In 3 cases near total thyroidectomy (6%) was performed, in 9 cases total thyroidectomy was performed (18%). Autotransplantation of the parathyroid gland was performed in 2 cases (4%). Berrypicking of lymph nodes was done in one case (2%).

For the 35 out of 50 patients with exceptional rehabilitation, intervention measures were not needed. Hypocalcemia was one of the most prevalent complications postoperatively observed in 18% of the patients followed by wound infection seen in 6% of the cases studied. The frequency of hematoma at the surgical site was 2%. Recurrent Laryngeal Nerve paralysis seen in 2% of the cases and Seroma formation was reported in one individual constituting 2% of the cases. Post-operative complications following thyroidectomy was observed in 30% of the patients.

In various studies RLN paralysis was recorded by Bhattacharya^[9] - 0.77%, Steurer^[10] - 0.26%, Erbil^[11] 1.8%, Chow^[12] 2.0%, Richmond^[13] 1.33%

In previous studies hypocalcemia was recorded by Bhattacharya^[9] - 6.2%, Steurer^[10] - 2.0%, Erbil^[11] - 6.6%, Richmond^[13] - 13%, Sasson^[14] - 6.0%, Palazzo^[15] - 9.8%, Lam^[16] - 30%, Page^[17] - 35%, Testa^[18] - 20%

In previous studies wound infection was recorded by Bhattacharya^[9] - 2% and Diongi^[19] - 2%

Wound Hematoma was recorded by Bhattacharya^[9] - 1% and Palestini^[20] - 1.5%.

Conclusion

The post-operative complications following thyroidectomy has been reduced considerably due to better understanding of thyroid anatomy, improved techniques for haemostasis, RLN dissection, and monitoring and preservation of parathyroid glands. However, effective post-operative treatment with a rapid detection of symptoms and therapeutic intervention plays an important role in decreased hospital stay and patient morbidity. It is therefore the responsibility of the Surgeon to provide the patient with a successful result in order to improve the quality of life.

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