



A CLINICAL STUDY OF POST OPERATIVE COMPLICATIONS OF THYROID SURGERY

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Conflicts of Interest: Nil

ABSTRACT:

Background: Thyroid surgery in the hands of experienced surgeons is currently one of the safest procedures performed. While complications following surgical removal of thyroid gland are rare, their consequences can often be debilitating and even life threatening.

Methods: Hospital based prospective study conducted at Department of Otorhinolaryngology and Head and Neck Surgery, S. P. Medical College and associated group of Hospitals Bikaner, Rajasthan. The study included all cases of thyroid swellings undergoing surgery willing for participation in the study during the study period.

Results: Hypocalcemia was the most commonly observed post-operative complication in our study and was seen in 12 out of 100 cases (12%). Superior laryngeal nerve paralysis could not be assessed due to lack of objective tools in our department.

Conclusion: In our study, the incidence of hypocalcemia was found to be 12%.

Keywords: Thyroid Gland, Hypocalcemia, Superior Laryngeal Nerve Paralysis

Introduction

Thyroid swelling is a common presentation in Otolaryngology Departments. Despite the coverage of National Iodine Deficiency Diseases Control Programme (NIDDCP) in India, iodine deficiency is still prevalent in many parts of India.¹

Thyroid surgery in the hands of experienced surgeons is currently one of the safest procedures performed. While complications following surgical removal of thyroid gland are rare, their consequences can often be debilitating and even life threatening.

Thyroidectomy remains the third most common cause of bilateral vocal fold immobility and also a significant number of unilateral vocal cord paralysis are caused by it. Patients who develop complications such as permanent hypocalcaemia and recurrent laryngeal nerve injury have a diminished quality of life and increased health costs and often require lifelong replacement

therapy, further surgical procedures and rehabilitation.²

MATERIAL AND METHODS

Study design: Hospital based prospective study.

Study duration: 12 months (July 2016 to June 2017)

Study Palace: Department of Otorhinolaryngology and Head and Neck Surgery, S. P. Medical College and associated group of Hospitals Bikaner, Rajasthan

Study population: The study included all cases of thyroid swellings undergoing surgery willing for participation in the study during the study period.

Sample size: The study included all cases of thyroid swellings undergoing surgery willing for participation in the study during the study period.

Inclusion criteria:

- Patients admitted and positively diagnosed as having thyroid Swelling requiring surgical management and willing for surgery.
- Patients who underwent thyroidectomy and attended follow up for 6 month after discharge.

- Patients with thyroid swellings with an already damaged recurrent laryngeal nerve as diagnosed by pre-operative indirect laryngoscopy examination.
- Patients undergoing thyroidectomy for recurrent thyroid disease, concomitant lymph node dissection and hyperparathyroidism.

Exclusion criteria:

RESULTS:

TABLE 1: AGE WISE DISTRIBUTION

Age group (years)	No. of cases	percentage
11-20	6	6
21-30	35	35
31-40	30	30
41-50	15	15
51-60	7	7
61-70	7	7
Total	100	100

In our study, most of the patients belonged to the third decades of life i.e. 35 out of 100 cases, followed by fourth decade of life and fifth decade of life. Least number of cases was seen in extremes of age. The youngest patient was 14 years old and the oldest patient 70 years old.

TABLE 2: SEX DISTRIBUTION

sex	No. of cases	percentage
Female	89	89
Male	11	11

Out of the 100 cases studied, 89 were females and 11 were males with a sex ratio of F:M=8.09:1.

TABLE 3: OPERATIVE PROCEDURE DONE

Procedure	No. of cases	Percentage
Hemithyroidectomy	75	75
Subtotal thyroidectomy	5	5
Total thyroidectomy	20	20

The commonly performed procedure in our study was Hemithyroidectomy (including both right & left) and was done in 75 cases out of 100 cases (75%). Total thyroidectomy was the second most commonly performed procedure and was done in 20 cases (20%). subtotal thyroidectomy was done in 5 cases(5%).

TABLE 4: INCIDENCE OF POST-OPERATIVE COMPLICATIONS

Post-operative complication	No. of cases	Incidence in percentage
Bleeding	1	1
Haematoma	2	2
Hypocalcemia	12	12
RLN paralysis	2	2
SLN paralysis	NA	NA
Thyrotoxic storm	0	0
Seroma	3	3
Wound infection	4	4
Hypertrophic scar/keloid	0	0
Stich granuloma	1	1

Hypocalcemia was the most commonly observed post-operative complication in our study and was seen in 12 out of 100 cases (12%). Superior laryngeal nerve paralysis could not be assessed due to lack of objective tools in our department.

DISCUSSION

Hundred patients who underwent various thyroidectomy procedures were studied to analyze the occurrence of different post-operative

complications following surgery from July 2016 to June 2017 in Department of Otorhinolaryngology and Head and Neck Surgery, S. P. Medical College and associated group of Hospitals Bikaner, Rajasthan.

The successful thyroid surgery requires skill and patience from the surgeon, the anaesthetic team, and all others involved in giving holistic healthcare to the patient.

Wound infection

Studies	Year	Number of cases	Percentage
Bhattacharya ³	2002	517	.2
Rosato et al. ⁴	2004	14934	.3
Bergenfelz et al ⁵	2008	3660	1.6
Present series	2017	100	4

The incidence of wound infection in the present series was 4%. It is considerably high compared to the other studies.

The wound infection was noted mainly on the 6th or 7th postoperative day. Earliest seen on the 5th postoperative day (2 patients). There was erythema and induration around the suture line, associated with tenderness.

The most fluctuant part of the swelling was drained by removing the overlying sutures. Pus was sent for culture sensitivity and broad spectrum antibiotics were initiated and subsequently changed as per the culture reports. All the infections were superficial, and wound healing was achieved by secondary intention

Seroma

Studies	year	No. of cases	percentage
LP Kowalski ⁶	2005	222	3.6
Suslu ⁷	2006	135	1
Present series	2017	100	3

The incidence of seroma formation in the present series was 3%. This is comparable to the Kowalski series.

Seromas were detected around the 8th postoperative day (2 out of 3 cases). The earliest seroma was detected on the 6th postoperative day.

1 seroma was seen after total thyroidectomy, 1 in subtotal

Thyroidectomy and 1 in hemithyroidectomy.

All the cases which developed seromas had goitres whose one of the dimensions was greater than 6 cm.

All the seromas were aspirated and appropriate antibiotics were started. Healing was seen in all cases.

Hypocalcaemia

studies	year	No. of cases	percentage
Bhattacharya ⁸	2002	517	6.2
Page ⁹	2007	351	35
Richmond ¹⁰	2007	150	13
Present series	2017	100	12

In the present study, the incidence rate of hypocalcemia was 12%.

The clinical features developed after the 2nd postoperative day in all patients. The patients mainly complained of upper and lower limb and circum-oral numbness and tingling sensation. On examination carpal spasm was seen in all patients. Serum calcium was decreased in all the patients.

All the patients were administered calcium, and vitamin-D supplements. All the patients recovered.

All the cases of hypocalcemia were seen in those who underwent total and sub total thyroidectomy. All the cases were temporary hypocalcemia because subsequent follow up showed normal serum calcium levels.

Hemorrhage

Studies	year	No. of cases	percentage
Bhattacharya ³	2002	517	1.1
Rosato et al. ⁴	2004	14934	1.2
Bergenfelz et al. ⁵	2008	3660	2.1
Present series	2017	100	1

In the present series hemorrhage was seen in 1 patient. The incidence rate was 1%. This is comparable to the Bhattacharya series.

The patient had undergone subtotal thyroidectomy for multi-nodular goitre.

The patient was in the operating room itself and was about to be shifted to the recovery room when it was noted that the drain was high. It was decided to re-explore the wound and bleeding was from the superior pedicle on the left side. The bleeding was controlled and the wound closed once again with a drain.

Recurrent Laryngeal Nerve Palsy

studies	year	No. of cases	percentage
Bhattacharya ³	2002	517	0.7
Rosato et al. ⁴	2004	14934	2
Present studies	2017	100	2

The incidence of recurrent laryngeal nerve palsy in the present series was 2%, with only 2 patient developing that complication. This is comparable to the Rosato series.

The patients had underwent Total Thyroidectomy for Multinodular goiter and papillary carcinoma.

The patients developed hoarseness of voice on the 1st post-operative day. An indirect laryngoscopy was done and on the left side the vocal cord mobility was restricted. The patient was put on corticosteroids and vitamins.

Stitch Granuloma

There was 1 case of stitch granuloma out of the 100 cases operated. The incidence rate being 1%. The patient had undergone sub-total thyroidectomy for Hashimoto thyroiditis.

The patient complained of serous discharge from the wound site 6 wk after the surgery. The patient was put on antibiotics and anti-inflammatory agents along with regular dressings. But there was no improvement. It was decided to explore the wound. On surgery the offending silk suture was removed. The patient recovered afterwards.

Suture granuloma is a rare complication of thyroid surgery and is known to occur after the use of non-absorbable suture materials deep within the skin. The pathogenesis of suture granulomas involves two steps. The first step is the initial reaction of the tissue, which reflects the amount of injury inflicted by the passage of the needle. After the initial reaction subsides, the second step occurs. In this step, the suture material causes specific inflammatory reactions. Suture granuloma is

clinically important in cancer patients because it can mimic tumor recurrence..

CONCLUSION

In our study, the incidence of hypocalcemia was found to be 12%. The most common causes were either inadvertent removal of parathyroid gland or injury to its vascular supply.

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