

A CLINICAL STUDY OF POST-OPERATIVE COMPLICATIONS IN THYROID SURGERIES IN A TERTIARY CARE HOSPITAL IN SOUTHERN ODISHA

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ABSTRACT

BACKGROUND

After obesity, thyroid disorders are the most common cause of metabolic disturbances, with surgery forming the mainstay of treatment of many thyroid swellings.

The major complications include postoperative haemorrhage, respiratory obstruction, hyperthyroid storm, hypoparathyroidism, and laryngeal nerve injuries. Surgery of the thyroid takes place in an area of complicated anatomy and in which a number of physiological functions and special senses are controlled. Thyroid gland being related to vital structures poses a challenge for the operating surgeon. But still, thyroid surgery in the hands of experienced surgeons is currently one of safest surgeries performed.

This study intends to assess the occurrence of various postoperative complications following the different thyroidectomy procedures and the role of adequate preoperative patient preparation, careful, meticulous surgical technique and early recognition of postoperative complications with the prompt institution of treatment in reducing morbidity and providing the patient with the best chance of a satisfactory outcome.

AIM OF THE STUDY

- To study the occurrence of various postoperative complications following the various thyroidectomy procedures.
- To analyse the various causes of postoperative complications in thyroid surgeries.
- To study the effect of management and followup of the patients up to 6 months of postoperative period in patients undergoing thyroid surgeries.

MATERIALS AND METHODS

This study was conducted on 50 patients undergoing various thyroidectomy procedures in the surgical ward of M.K.C.G Medical College and Hospital, Berhampur during the study period of September 2013 to August 2015. Majority of the patients were from the city of Berhampur or from the villages around the city.

All the 50 patients were observed for any postoperative complications following their thyroid surgery for a period of 6 months.

RESULTS AND CONCLUSION

In our study, the findings were that the most common complication following thyroid surgery was hypocalcaemia in 12 % of patients, followed by seroma formation in 4 % of patients and wound infection in 2 % of cases.

KEYWORDS

Thyroidectomy, Hypoparathyroidism, Recurrent Laryngeal Nerve, Hypocalcaemia.

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INTRODUCTION: Numerous complications may arise following surgical removal of the thyroid gland. These problems often result from either the surgical technique or from metabolic disturbances. Primary complications associated with thyroid surgeries include recurrent laryngeal

nerve injury, parathyroid deficiency, postoperative bleeding and respiratory distress. Problems less frequently seen are infection and sympathetic nerve injury. While prevention of these complications is a primary goal during thyroid surgery, early recognition and management by the thyroid surgeon is essential for safe recovery of the patient.

Postoperative hypocalcaemia is the most common immediate surgical complication of total thyroidectomy. The incidences of unilateral and bilateral vocal cord paralysis were 0.77% and 0.39% respectively.⁽¹⁾ Inadvertent excision

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of a parathyroid gland occurred in 9% of patients undergoing thyroidectomy.⁽²⁾

The low preoperative serum 25-hydroxy vitamin D3 level was more significant than low postoperative hypocalcaemia.⁽³⁾ Some complications like haematoma, seroma can be easily managed while others like recurrent laryngeal nerve injury and hypocalcaemia are quite significant and life threatening. The rate of complications during thyroid surgeries has decreased because of better instrumentation, illumination and surgical expertise.⁽⁴⁾

MATERIALS AND METHODS: The study was carried out in 50 patients admitted to the surgical ward of M.K.C.G. Medical College and Hospital, Berhampur, and undergoing various thyroidectomy procedures from September 2013 to August 2015 including the period of followup. A detailed clinical history was obtained from the patient and thorough clinical examination was done. Relevant investigations were performed.

All the cases were followed up to discharge and then followed up for a minimum period of 6 months.

RESULTS: In my study, maximum number of patients were between 31 to 40 years of age (n=15, 30 %). The youngest was 14 years old and oldest was 65 years old.

Male: Female ratio was 1:4. 72 % of the cases were benign disorders while remaining 28 % were malignant. The most common thyroid procedure done in our study was hemithyroidectomy (n=36, 72%), followed by total thyroidectomy (n=13, 26%) and 1 case of near total thyroidectomy (n=1, 2%).

Hypocalcaemia was the most common postoperative complication observed in 6 cases (12%), which was transient in nature. Seroma formation in the wound site was seen in 4 cases (8%). Wound infection was seen in 2 cases (4%). Bleeding, haematoma, RLN paralysis, SLN paralysis, thyrotoxic storm, airway obstruction, hypothyroidism, recurrent hyperthyroidism and hypertrophic scar/keloid were the other complications that were observed, which were not seen in any of our cases following surgery. All patients with hypocalcaemia were given oral calcium supplements at discharge for a period of 1 month. Seroma was treated with

plain needle aspiration and no recurrence at discharge. Wound infection was treated with antibiotic therapy for a period of 1 week. Total thyroidectomy was associated with maximum complications (6 hypocalcaemia, 2 seroma and 2 wound infections). Hemithyroidectomy was associated with 2 cases of seroma formation. Near-total thyroidectomy was not associated with any postoperative complication. Malignancy was associated with an increased risk of complications. Papillary carcinoma of thyroid was associated with 3 cases of hypocalcaemia, 1 case of seroma and 1 case of wound infection. Follicular carcinoma of thyroid was associated with 2 cases of hypocalcaemia and 1 case of seroma formation. Multi nodular goitre was associated with 1 case each of hypocalcaemia, seroma formation and wound infection. Colloid goitre was associated with 1 case of seroma formation. Majority of the patients in this study (34 out of 50) had a postoperative hospital stay between 1 to 4 days (68%). 13 out of 50 cases had a postoperative hospital stay between 5 to 7 days (26%). 3 out of 50 cases had a postoperative stay between 8 to 10 days (6%). All the hypocalcaemia patients on oral calcium supplements during followup, no clinical or biochemical evidence of hypocalcaemia after discharge. All the other patients whose postoperative recovery was uncomplicated had no fresh complaints at any time during the followup.

DISCUSSION: Among the postoperative complications, hypocalcaemia was the most common postoperative complication and was seen in 12% of the patients. The second most common postoperative complication was seroma occurring in 8% of the 50 patients. The incidence of wound infection was 4%. Bleeding, haematoma, RLN and SLN paralysis, thyroid storm, hypothyroidism, airway obstruction were not observed as a postoperative complication in any of the cases. Steurer series found 3.4%, 7.2%, and 2.5% of temporary RLN palsy in the benign thyroid nodule, thyroid malignancy and hyperparathyroidism groups respectively.⁽⁵⁾ Richmond series shows the rate postoperative hypocalcaemia to be 20% and this parameter is comparable with our series (12%) with a difference of 8%.⁽⁶⁾

Authors	Postoperative complications						
	RLN paralysis	SLN paralysis	Transient Hypocalcaemia	Hypothyroidism	Wound infection	Wound Haematoma	Thyrotoxic storm
Bhattacharya ¹	0.77%	NA	6.2%	NA	2.0%	1.0%	NA
Steurer ⁵	0.26%	NA	2.0%	NA	NA	NA	NA
Erbil ⁷	1.8%	NA	6.6%	NA	NA	NA	NA
Chow ⁸	2.0%	NA	NA	NA	NA	NA	NA
Richmond ⁶	1.33%	NA	13%	NA	NA	NA	NA
Sasson ⁹	NA	NA	6.0%	NA	NA	NA	NA
Palestini ¹⁰	NA	NA	NA	NA	NA	1.5%	NA

Palazzo ¹¹	NA	NA	9.8%	NA	NA	NA	NA
Lam ¹²	NA	NA	30%	NA	NA	NA	NA
Page ¹³	NA	NA	35%	NA	NA	NA	NA
Dionigi ¹⁴	NA	NA	NA	NA	2.0%	NA	NA
Testa ¹⁵	NA	NA	20%	NA	NA	NA	NA
Seiberling ¹⁶	NA	NA	NA	24.1%	NA	NA	NA
Present study	0%	0%	12%	0%	4%	0%	0

Table 1

CONCLUSION: In our study, the incidence of hypoparathyroidism was found to be 12%. 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 seroma formation and wound infection was 8% and 4% respectively in the present study.

The incidence of bleeding, hematoma formation, RLN or SLN paralysis, thyrotoxic storm, airway obstruction, and other less common complications like Horner's syndrome, tracheal perforation, chyle fistula, recurrent hyperthyroidism, hypothyroidism, hypertrophic scar/keloid, etc. was nil in this study.

Due to a better understanding of thyroid gland anatomy, improved techniques in haemostasis, RLN dissection and monitoring and preservation of parathyroid glands, there has been a steady decline in the incidence of postoperative complications following thyroidectomy. In addition, appropriate postoperative care with early identification of complications and prompt institution of corrective treatment plays an important role in reducing the duration of postoperative hospital stay and limiting patient morbidity.

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