



International Journal of Surgery Science

E-ISSN: 2616-3470
P-ISSN: 2616-3462
© Surgery Science
www.surgeryscience.com
2021; 5(1): 347-350
Received: 30-12-2020
Accepted: 13-02-2021

Dr. Pandey
Professor, Department of General
Surgery, Sree Mookambika
Institute of Medical Sciences,
Kulasekharam, Kanyakumari,
Tamil Nadu, India

Sreelakshmi JB
Junior Resident, Department of
General Surgery, Sree Mookambika
Institute of Medical Sciences,
Kulasekharam, Kanyakumari,
Tamil Nadu, India

Aswathy Harikumar
Junior Resident, Department of
General Surgery, Sree Mookambika
Institute of Medical Sciences,
Kulasekharam, Kanyakumari,
Tamil Nadu, India

Karthick MP
Junior Resident, Department of
General Surgery, Sree Mookambika
Institute of Medical Sciences,
Kulasekharam, Kanyakumari,
Tamil Nadu, India

A study on post-operative complications in thyroid surgery

Dr. Pandey, Sreelakshmi JB, Aswathy Harikumar and Karthick MP

DOI: <https://doi.org/10.33545/surgery.2021.v5.i1f.635>

Abstract

Background: Thyroid swellings are one of the most common cases that present in surgical OPD. In general thyroid surgeries are associated with an extremely low mortality rate, though dangerous and life threatening complications such as respiratory distress and haemorrhage have been reported infrequently. Most of the complications can be avoided with proper surgical precautions and techniques.

Aim: To study the incidence and prevalence of complications after total thyroidectomy.

Materials and Methods: Patients with obvious thyroid swellings were included in a prospective study which was conducted for a year in a tertiary centre. Various entities like clinical examination, ultrasonological studies and tissue diagnosis were included.

Results: In this study, of the total 50 patients, incidence of thyroid swellings were much higher in the age distribution between 30-40 years of about 48 percent. It was found that there was a female predominance, when compared to the male gender with a higher percentage of 84%. About 34% patients were clinically diagnosed with diffuse goitre, 29% patients were diagnosed with multinodular goitre, 25% patients with carcinoma thyroid, 12% patients with solitary nodule. In this study population of 50 patients, only 10 patients were found to have complications. Out of the 10 patients who developed complications in the post operative period, the most common complication were hypocalcemia. Which was noted in 4 patients about 8%, 2 patients developed haemorrhage (4%) and voice change was seen in 2 patients and 1 patient developed wound infection and only one patient developed RLN palsy.

Conclusion: In this study on 50 patients, the post operative complications were studied. Only 10 patients developed post operative complications. The most common post operative complications was found to be hypocalcemia followed by haemorrhage. The incidence of transient recurrent laryngeal nerve injury and hypocalcemia were within the acceptable limits. Incidence of wound infection in minimal. Complications and sequelae of thyroid surgery can yet be reduced by careful evaluation of the surgical and medical therapeutic options, have more precise surgical indications, a thorough knowledge of the surgical anatomy, a rigorous surgical technique, a systematic dissection of recurrent laryngeal nerve and parathyroid gland.

Keywords: Thyroid surgery, ultrasonogram, FNAC, histopathological studies, hypocalcemia

Introduction

Thyroid surgery is the most common endocrinal surgical procedure performed in many of the institutions. As the thyroid gland is located in an area of complicated anatomy due to its close proximity with different vital structures, various surgeries involving the thyroid gland poses a challenge for the operating surgeon. Nevertheless, following thyroid surgeries, it bears a certain rate of complications.

These complications often result from either the surgical procedure or from metabolic abnormalities following the surgery. Although the incidence of these complications are low, some problems are seen more frequently than others. Post operative life threatening complications such as hemorrhage or respiratory distress are common. During recent years, a more radical surgery for thyroid swellings such as total thyroidectomy is preferred over subtotal resection^[1].

Materials and Method

In this prospective study, a total of 50 patients, who attended the Surgical Department, Sree Mookambika Institute of Medical Sciences, Kulasekharam with clinically diagnosed thyroid swellings were included. All the patients were examined after obtaining the informed consent. The size, extent, mobility and fixity of the swelling were noted.

Corresponding Author:

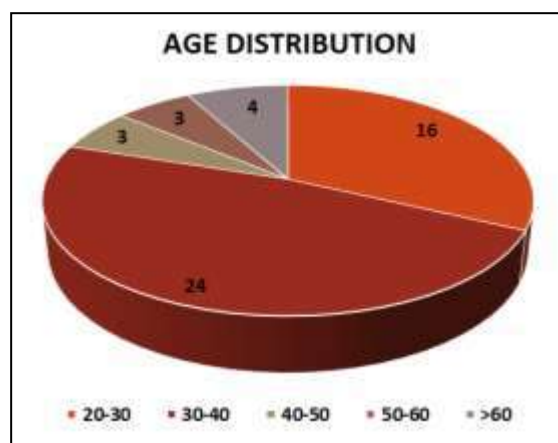
Dr. Pandey
Professor, Department of General
Surgery, Sree Mookambika
Institute of Medical Sciences,
Kulasekharam, Kanyakumari,
Tamil Nadu, India

The palpable cervical lymph nodes were checked for and if any, were noted. Once the clinical examination was done, a thyroid profile and ultrasonogram were performed. The patients with clinically detectable thyroid swellings in euthyroid state with normal thyroid function tests.

Once the clinical and radiological investigations were obtained, it was confirmed with fine needle aspiration cytological examination, after which they were explained about the need for surgery. After obtaining consent and all routine investigations such as complete hemogram, renal function tests, blood profile, X-ray chest and neck, indirect laryngoscopy, pre anesthetic check up was done and surgery was planned. All the patients underwent total thyroidectomy. All the specimens were fixed in 10% buffered formalin and sent for histopathological examination and the results were recorded. The Statistical analysis was done using SPSS 23.0.

RESULTS:

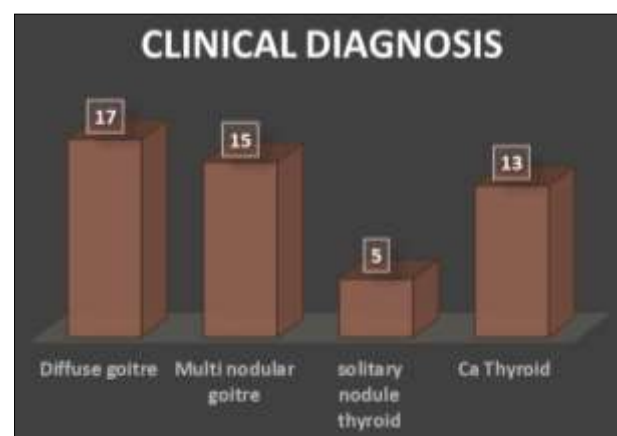
Out of the 50 patients included in the study, incidence of thyroid swellings were much higher in the age distribution between 30-40 years about 40.8 percent of total patients belonged to this age group. It was found that females were affected than males, almost 84% of the total patient. Each patient was clinically examined in Pizzillo's method, and findings were noted. Of the total 50 patients, 17 patients were clinically diagnosed with diffuse goitre (34%), 15 patients were diagnosed with multinodular goitre (30%), 13 patients with carcinoma thyroid (26%), 5 patients with solitary nodule (10%). The clinical diagnosis were then confirmed with FNAC.



Graph 1: Age Distribution



Graph 2: Sex Distribution

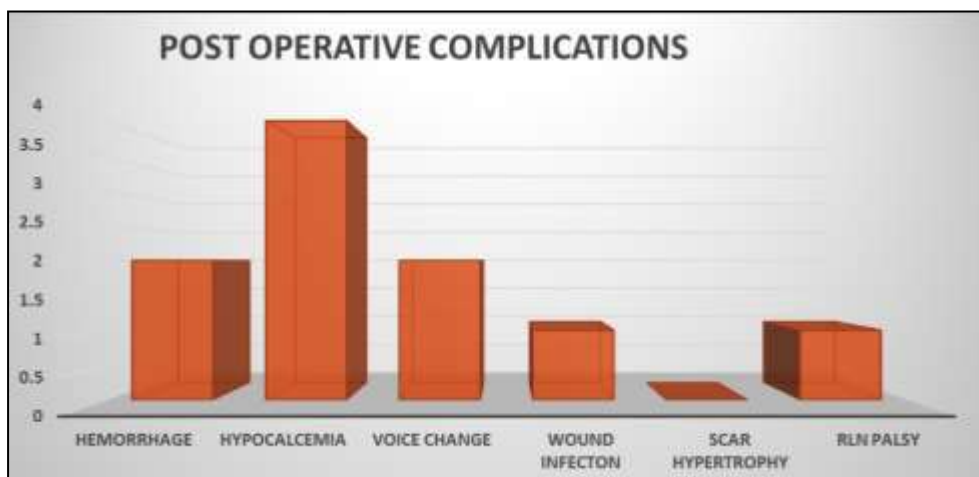


Graph 3: Clinical Diagnosis

All the patients were then planned for surgery (total thyroidectomy) were followed up for any post operative complications. Immediate complications such as haemorrhage, stridor, respiratory distress, hypocalcemia were watched for. Among 50 patients who were evaluated, diagnosed and surgically operated, only 10 patients were found to have complications. Out of the 10 patients who developed complications, the most common postoperative complication was hypocalcemia of the total cases, 4 patients developed hypocalcemia, 2 patients developed haemorrhage and voice change each and 1 patient developed wound infection and another one developed RLN palsy.

Table 1: Complications

Sl. No	Complication	Number of Patients
1.	Hemorrhage	2
2.	Hypocalcemia	4
3.	Voice change	2
4.	Wound infecton	1
5.	Scar hypertrophy	0
6.	Rln palsy	1

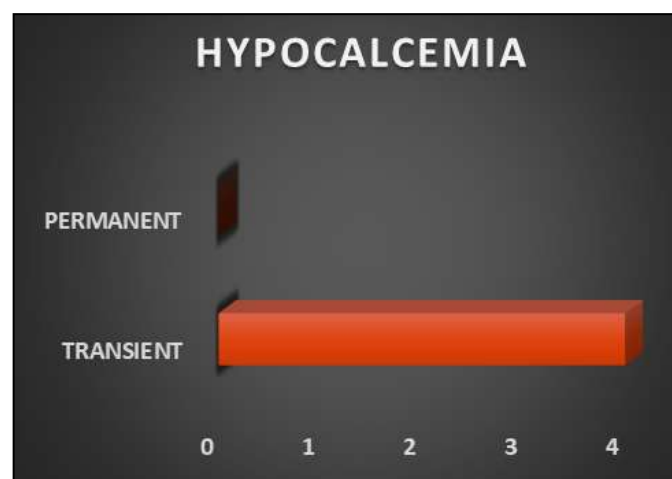
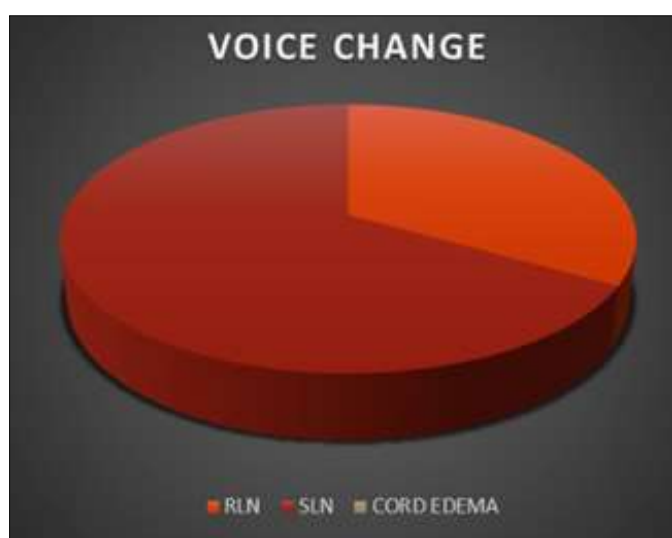
**Graph 4:** Post Op Complications

In this study on 50 patients, 2 Patients developed hemorrhage both of which were post operative. No patients developed intra operative haemorrhage.

Table 2: Shows intra operative haemorrhage

Sl. No	Type	Total	Percentage
1	Intra OP	0	0%
2	Post op	2	4%
3	both	0	0%

Hypocalcemia was one of the most common post op complications found, which is 8% of total patients. All the 4 patients affected with hypocalcemia were transient and none of the patients developed permanent hypocalcemia. These patients were on calcium supplementation and regular follow up.

**Graph 6:** Hypocalcemia**Graph 5:** voice change**Table 3:** Voice change

Sl. No	Type	Total	Percentage
1	RLN	1	2%
2	SLN	2	4%
3	Cord edema	0	0%

In this series, 2 % of the patients (1 patient) developed recurrent laryngeal nerve palsy. Those who developed RLN and SLN palsy underwent physiotherapy and speech therapy. Those affected by RLN palsy did not require tracheostomy.

Table 4: Hypocalcemia

Sl. No	Type	Total	Percentage
1	Transient	4	8%
2	Permanent	0	0%

Discussion

In this study, on 50 patients incidence of thyroid swellings was most common in the age group 30-40 years about 40.8 percent of total patients belonged to this age group. A study done by Halbhavi SN *et al.*, which included 60 patients showed that the mean age of onset was of 38.6 years of age, with maximum incidence of thyroid swellings in the age group 31-40 years [2]. It was found that females were affected than males, almost 84% of the total patients. Male: female ratio in this study 1:5. Ghazaleh *et al.*, [3] (84.0% female and 16.0% male), Kusum Borsaikia *et al.*, showing 83.49% of female cases and 16.5% of male cases [4] and Md. Shafiqul Islam *et al.*, [5] where 28.88% of male cases and 71.12% of female cases, representing Male: Female ratio of 1:2.

In this series, Hypocalcaemia was one of the most common post op complications found, which is 8% of total patients. All of which are transient only. A study conducted by Erbil Y *et al.* [11] named the impact of age, vit D level and incidental parathyroidectomy on postoperative hypocalcemia after total or near total thyroidectomy reveals that in advancing ages the level of vitD fall postoperatively increases tremendously because of which the incidence is 25 times greater for the patients of more

than 50 years of age. Delbridge *et al.* [6] state that transient hypoparathyroidism should be an accepted outcome of bilateral thyroid surgery rather than a complication. It is noted that the degree and duration of hypocalcemia increase with the extent of thyroid surgery. Permanent hypoparathyroidism has been reported to occur after total thyroidectomy is between 0.1 % and 32 % of patients overall.

Incidence of RLN palsy is 2% in this study. Bhattachirya *et al.* [7], 2002, in his study out of total 517, 1.1% developed RLN palsy. Herranz Gonzales [8]. and colleagues studied 513 thyroidectomies and observed 2.3% incidence of unilateral RLN injury.

In this study, the Incidence of haemorrhage as post-operative complication was found to be 4%. Rosato L *et al.* [9] Though the hemorrhagic complication is considerably lower in bilateral subtotal thyroidectomy group (2.1%), it was higher in total thyroidectomy (1.6%). It frequently occurs during the post anaesthetic period when the end tracheal tube is removed.

It is surprising to note that the hypocalcemia is the most common complication (8%). It is within the figure suggested by Bailey and Love (25%). The technique of medial ligation of inferior thyroid branches have paid off. Since it was not practiced in all cases, incidence of hypocalcemia may be further lowered by insisting the technique in all cases. The incidence of RLN paralysis is 2%. But still the patient managed to do without tracheostomy. Probably due to partial paralysis. The incidence quoted in book is 1-2%. Use of USG in all MNG routinely may help reduce the incidence of thyroiditis being operated [10].

Conclusion

Following the study certain conclusion have been reached. The incidence of transient recurrent laryngeal nerve injury and hypocalcemia were within the acceptable limits. Incidence of wound infection is minimal. This study shows that the total thyroidectomy can be done with very low complication rate in cases of benign thyroid disease affecting the whole gland. Among the study population, Hypo-parathyroidism is a relatively common complication than the recurrent laryngeal nerve injury. Complications and sequelae of thyroid surgery can yet be reduced by careful evaluation of the surgical and medical therapeutic options, have more precise surgical indications, a thorough knowledge of the surgical anatomy, a rigorous surgical technique, a systematic dissection of recurrent laryngeal nerve and parathyroid gland in case of bilateral operation and meticulousness during the procedure.

Source of funding: Self

Conflict of interest: None

References

1. Decker GAG, du Plessis DJ, Lee McGregors. Synopsis of Surgical Anatomy, The Thyroid, thymus, parathyroid gland 198.
2. Subhash Halbhavi N, Mahantayya Ganjigatti, Shrikant Kuntoji B, Mohammedgouse Karikazi A. Clinicopathological study of thyroid swellings in HSK hospital in Karnataka, India, Int Surg J 2018;5(2):420-425.
3. Ghazaleh N, Haddadinezhad S, Jafari M. Fine needle aspiration cytology of thyroid nodules: correlation with surgical histopathology. Turk Jem 2008;12:73-4.
4. Kusum Borsaikia, Mukul Patar. Clinicopathological Study of Thyroid Swellings with Some Emphasis on Geographical and Community Distribution: A Hospital Based Analysis,

Bengal Journal of Otolaryngology and Head Neck Surgery 2016;24(2):74-79.

5. Md. Shafiqul Islam, Belayat Hossain Siddiquee, Nasima Akhtar, Kazi Shameemus Salam, Mohammad Aktaruzzaman. Comparative study of FNAC and histopathology in the diagnosis of thyroid swelling, Bangladesh J Otorhinolaryngol 2010;16(1):35-43.
6. Delbridge L, Guinea AI, Reeve TS. Total Thyroidectomy for bilateral benign multinodular goitre; effect of changing practice. Arch Surg 1999;134:1389-1393
7. Neil Bhattacharya, Marvin P, Ervin Fried. Assessment of morbidity and complications of total thyroidectomy. Arch otolaryngol Head Neck Surg 2002;128:389-92.
8. Subhash N Halbhavi, Mahantayya Ganjigatti, Shrikant B Kuntoji, Mohammedgouse A Karikazi. Clinicopathological study of thyroid swellings in HSK hospital in Karnataka, India, Int Surg J 2018;5(2):420-425.
9. Rosato L, Avenia N, Da Palma M, Gulino G, Nasi PG, Pezullo L. Complications of total thyroidectomy: incidence, prevention and treatment. Chir Ital 2002;54(5):635-42.
10. Seymour I Schwartz, Charles Brunicki F, Dana K Andersen, Timothy R Billiar, David L Dunn, Schwartz's principles of surgery 2005, pp 1633.