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Surgery

A CLINICAL STUDY OF POST-OPERATIVE COMPLICATIONS OF THYROID SURGERY IN TERITIARY CARE HOSPITAL,KURNOOL

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ABSTRACT

BACKGROUND: Thyroid Surgeries comprise one of the more commonly performed by general surgeon. Today most of complications are related to either metabolic derangement or recurrent laryngeal nerve injury.

MATERIALS & METHODS: The aim of the study was to determine incidence of post operative complications of various thyroid surgeries, time of onset in relation to date & time of surgery, length of hospital stay, management and outcome of complications. In this 2 years study series of 50 cases of complications of various Thyroid Surgeries which are admitted to the GGH-Kurnool during the period of November 2016 to 2018 were profiled for the study and patients were followed up post operatively for a minimum period of 12 months.

RESULTS: Most of the patients in this series were in the fourth decade of the life with female preponderance 88%. Most of them presented with swelling (78%), Histopathological examination accounting for colloid (30%) multi nodular goiter (22%) follicular neoplasm (22%) mostly. Major procedure done was Hemithyroidectomy (52%). Major complications was Hypocalcaemia (18%), RLN Injury (6%), Hematoma (4%) Seroma (4%)

CONCLUSION: Hypocalcemia is the most common complication of Thyroidectomy in this study. RLN palsy is another complication associated with this procedure. It is essential to keep in mind the possible complications that may arise and be well prepared to manage them, good surgical expertise is essential to avoid such complications.

KEYWORDS : Thyroidectomy, Complications, Hypocalcemia, Recurrent Laryngeal Nerve Injury.

INTRODUCTION

Thyroid disorders warranting surgical intervention can be either benign tumors or malignant ones. Another reason for thyroid surgery is the swelling or enlargement of thyroid in the form of nodular or colloid goiter, when enlarged, causing difficulties in breathing, voice production, and swallowing. Thyroidectomy is also indicated in cases where an enlarged thyroid gland exhibits toxic symptoms, or where there is a high index of suspicion of malignancy, albeit cosmoses is the most common indication.[2]

The type of thyroidectomy is contingent upon the benign or malignant features of the lesion, size of the lesion, and the degree of impairment.[3] During the eighteenth century, the mortality rate of thyroid surgery was as high as 40% from hemorrhage and sepsis.[4]

The advent of modern antiseptic, anaesthetic facilities and improved surgical techniques along with better hemostatic and surgical instrumentation during the last century have tremendously contributed to the very low morbidity and mortality rates of modern thyroid surgery.

Major postoperative complications of thyroid surgeries include wound infection, hematoma/ hemorrhage causing airway compromise, hypocalcemia, recurrent or superior laryngeal nerve injury, and thyroid storm.

Precise knowledge of the intricate anatomic details and meticulous surgical technique are prerequisite determinants for successful outcomes and to keep complications within acceptable limits.

Ramirez et al[5]asserted that complications accompanying thyroid surgery are directly proportional to the extent of thyroidectomy and inversely proportional to the surgeon's experience.

The aim of this study was to assess the incidence of different complications of various thyroid surgeries done for benign as well as malignant thyroid disorders in a tertiary care center and to compare it with published data with a brief overview of the evolution of ThyroidSurgery

AIMS AND OBJECTIVES

1. To study the occurrence of various post-operative complications following various thyroid surgeries irrespective of indications those are done in Department of GENERAL SURGERY in Government General Hospital, Kurnool Medical College, and Kurnool from November 2016 to November2018.
2. To evaluatePreoperative factors which are likely to influence the occurrence of postoperative complication rates.
3. To studythe incidenceof various Complications and time of onset in relation tothe date and time of surgery.
4. To study length of hospital stay of patients with different postoperative complications.
5. To studythe managementand outcome ofeach complication during the study period.

METHODOLOGY

This study was conducted in the Department of General Surgery, Government GeneralHospital,Kurnool Medical College, Kurnool 50 patientswho are all admitted for various thyroid surgeries between November 2016 to November 2018.

INCLUSION CRITERIA:

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

EXCLUSION CRITERIA:

- The patient's with thyroid swellings with an already damaged RLN as diagnosed preoperative IDL examination.
- Patients undergoing thyroidectomy for recurrent disease, concomitantlymphnode dissection, and hyperparathyroidism.
- Patients who have undergoing thyroidectomy and who were lost to follow up.

SAMPLING PROCEDURE:

A Total of 50 consecutive cases are taken from our hospital.The cases that met the inclusion criteria cited above are included in the study.

- Institutional committee approval and written informed consent taken for all cases.
- Patients monitored from the time of admission,up till the time of discharge from the hospital and are laterfolloweduptill duration of study at 3 months interval in the OPD.
- Detailed analysis of these patients who underwent Thyroid surgerywas done regarding various aspects such as Age,sex,Diagnosis and indication for surgery, type of

thyroidectomy procedure done, the occurrence of individual complications, type of intervention and patient outcome, duration of stay and follow up.

OBSERVATIONS AND RESULTS

In this study, I have analyzed in detail our observation of various postoperative complications following different thyroid surgeries in 50 patients who received treatment in Government General Hospital, Kurnool between November 2016 to November 2018.

Table – 1: Age Wise Distribution

Age group (years)	No. of cases	Percentage
11-20	1	2
21-30	14	28
31-40	17	34
41-50	9	18
51-60	6	12
61-70	3	6
Total	50	100

In our study, most of the patients belonged to the fourth decade of life i.e. 17 out of 50, followed by the third decade of life and fifth decade of life. Least number of cases were seen in extremes of age. The youngest patient was 17years old.

Table – 2: Mode Of Presentation

Symptoms	No. of cases	Percentage
Swelling	39	78
Swelling + pain	7	14
Swelling + palpitations	2	4
Swelling + pain + palpitations	2	4

Table – 3: Histopathological Diagnosis

Diagnosis	No. of cases	Percentage
Colloid goiter	15	30
Multinodular goiter	11	22
Primary thyrotoxicosis	3	6
Hashimoto's thyroiditis	4	8
Follicular adenoma	11	22
Hurtle cell adenoma	3	6
Papillary carcinoma	2	4
Follicular carcinoma	1	2

Table – 4: Operative Procedure Done

Procedure	No. of cases	Percentage
Hemithyroidectomy	26	52
Near total thyroidectomy	11	22
Total thyroidectomy	13	26

Table – 5: Incidence Of Post-operative Complications

Post-operative complications	No. of cases	Percentage
Hematoma	2	4
Infection	0	0
Seroma	2	4
RLN paralysis	3	6
SLN paralysis	0	0
Hypocalcaemia	9	18
Airway obstruction	0	0
Hypothyroidism	0	0
Thyrotoxicosis	0	0
Aerodigestive injury	0	0
Hypertrophic scar / keloid	0	0
Recurrent hyperthyroidism	0	0

Table – 6: Intervention Procedures Performed

Procedure	No. of cases	Percentage
Oral calcium + vitamin D +calcium gluconate i.v	9	18
Needle aspiration	4	8
No intervention required	37	74

Table –7: Relationship Of Diagnosis With The Occurrence Of Complications

Diagnosis	Hematoma	Infection	Seroma	RLN paralysis	SLN paralysis	hypocalcemia	Hypothyroidism	Thyrotoxicosis	Airway obstruction	Keloid	Recurrent hyperthyroidism
Colloid goitre	1	0	1	0	0	0	0	0	0	0	0
Multinodular goitre	1	0	0	1	0	3	0	0	0	0	0
Primary thyrotoxicosis	0	0	0	1	0	0	0	0	0	0	0
Hashimoto's thyroiditis	0	0	0	0	0	0	0	0	0	0	0
Adenoma	0	0	1	1	0	4	0	0	0	0	0
Malignancy (papillary and follicular)	0	0	0	0	0	2	0	0	0	0	0

Table – 8: Evaluation Of All Patients At Follow-up

Complaint	No. of cases	Percentage
Hematoma	2	Relieved within 1day
Seroma	2	Relieved within 1day
RLN paralysis	3	Up to 3months
Hypocalcemia	9	Up to 3months
No complaints	34	-

DISCUSSION

Fifty patients who underwent various thyroidectomy procedures were studied to analyze the occurrence of different early post-operative complications following surgery from November 2016 to November 2018 in our hospital. Statistical analysis of these cases has been made which is mentioned in the observation tables with reference to several parameters and conclusions are drawn from them. A comparison with the series of others has also been made. In our study, it was found that the minimum patient age was 17 years and maximum age was 68 years the male: female ratio was 1.2:8.8. In our study, patients presented with a neck swelling as the sole complaint i.e. 78%. Patients had both swelling and pain during the initial presentation is 14%.

Table:- Comparison Of Histological Diagnosis With Other Studies

Studies	Benign	Malignancy
Calo, et al[76]	68.3%	31.6%
Rix, et al[77]	90%	10%
Sakorafas,et al[78]	73%	27%
Sasson,et al[79]	48%	52%
Kashi Z, et al[73]	74.9%	25.1%
Pandey AK, et al[74]	89.2%	10.8%
Lang BH, et al[75]	82.1%	17.9%
Present study	94%	6%

Among the post-operative complications, Hypocalcaemia was the most common post-operative complication and was seen 18% of the patients. The second most common post-operative complication was RLN paralysisoccurring in 6% of the 50 patients. The incidence of haematoma is 4% and seroma was 4%.

CONCLUSION

A clinical study of post-operative complications in 50 patients undergoing various thyroidectomy surgeries was done between November 2016 to November 2018 in Government General Hospital, Kurnool Medical College, Kurnool.

In the present study, the most common complication after thyroidectomy was Hypocalcaemia seen in 18% of cases.

Most of the patients who developed hypocalcemia (7 out of 9cases) underwent total thyroidectomy and remaining two patients underwent near-total thyroidectomy. And none of the patients who underwent hemithyroidectomy developed hypocalcemia. This can be attributed to

total thyroidectomy accounting for almost three fourth the number of the thyroidectomies procedures.

All the cases of hypocalcemia observed were temporary and no cases of permanent hypocalcemiawere seen in the study.

The incidence of RLN paralysis was seen in 6% and could be due to neuropraxia. The paralysis was temporary.

The incidence of wound site hematoma was 4% in our study and could be attributed to a faulty drain system. The possibility of inadequate hemostasis was ruled out in these patients as the hematoma was small and located superficially and there were no associated symptoms of airway obstruction.

The incidence of seroma formation occurred in 4% of our patients.

Due to improved pre-operative patient preparation and adequate control of-of blood pressure and adequate hemostasisintraoperatively, no cases of thyrotoxicosis were seen in any of the patients in the present study.

Also due to improved knowledge about thyroid gland anatomy and the variations in both of the RLN and the position of the parathyroid glands combined with a meticulous dissection has gone a long way in reducing the incidence of postoperative complications following thyroid surgeries

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