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Profile of Complication of thyroid surgery

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ABSTRACT

Introduction: Surgeries on thyroid are routinely common practiced surgery. Perioperative and post operative complications still exits and some of immediate postoperative complication can be life threatning if not properly dealt with.

Material and Method: The present study was done to evaluate peri operative and post operative complication related to thyroid surgery and their management strategy in 50 patients undergoing various thyroid surgeries in our hospital.

Results: 22% patients had hypothyroidism in follow up period, 2% during hospital stay.12% patients had hypoparathyrodism during hospital stay and 6% during follow up, 8% transient RLN palsy, 2% permanent RLN palsy, other rare complications include wound infection , seroma formation, superior laryngeal nerve palsy. Post operative haemorrhage was not found even in a single case.

Conclusion: Hypoparathyrodism was the most common complication during during hospital stay (12%) and hypothyroidism (22%) during follow up periods. In spite of all measures keen observation during in peri and postoperative period is important to look for complications for early intervention.

INTRODUCTION

The most notable thyroid surgeon's were Email Theoder Kocher and C.A. Theoder Billroth, who performed thousands of operations with increasing successful results.[1] Some complications of thyroid surgery are life threatning, hence attempt is made to study the various complications of thyroid surgery. Mortality rate from thyroid surgery has been decreased due to improved surgical techniques.

In general, complications of thyroid surgery can be divided into minor and major. Minor complication includes postoperative surgical site seroma and poor scar. Potential major complications of thyroid surgery include bleeding, injury to recurrent laryngeal nerve, hypothyroidism, hypoparathyrodism, thyrotoxic strom, injury to superior laryngeal nerve and infection.

METHODS

The present study of **"Profile of Complication of thyroid surgery"** was prospective and conducted in the department of surgery, Pt. B.D. Sharma PGIMS, Rohtak. A total of 50 patients undergoing all types of thyroid surgery from February 2013 to November 2014 were included in the study. All patients below 14 years of age, those not giving consent for inclusion in the study, those not found fit for general anesthesia, those who refused for surgery and patients of anaplastic carcinoma were excluded. From the study, all other patients undergoing different varities of thyroid surgery were examined. A detailed history including symptoms suggestive of pressure symptoms like dysphagia, dyspnoea, and dysphonia were

asked. History pertaining to thyroid status i.e. hypo, hyper or euthyroid and detailed physical examination was carried out. Diagnostic investigations i.e. FNAC, ultrasound and thyroid profile were done. After making the final diagnosis and operative fitness, relevant thyroid surgery was done. During anesthesia reversal, vocal cord movement was noted as intimated by the anesthesist. In the ward patients were observed for the sign of hypocalcemia, recurrent laryngeal nerve injury or superior larengeal nerve injury or other complication like thyroid strom in patients of thyrotoxis. After discharge signs of hypothyroidism and hypocalcemia were observed during follow up. Regular serum Ca^{++} and thyroid profile estimation was done in these patients. Any complication arising was suitably dealt and details of management and final outcome were noted. During follow up, any sign of hypothyroidism and hypoparathyrodism were noted and regular serum calcium and serum thyroid profile were done. Detailed data's were collected and analysed with regard to various complications, recorded their management and final outcome.

RESULTS

In the present study, 45 patients were females and 5 patients were males. Majority of patients (42%) presented with swelling in neck 6 months to 2 years duration, followed by (30%) less than 6 months duration. Only 12% had swelling more than 5 year duration. Pressure symptoms like dysphagia was present in 11 patients, dyspnoea present in 5 patients, one presented with voice change. Majority of patients were euthyroid biochemically (98%). Only one patient had hypothyroidism. In the present series 72% underwent hemithyroidectomy called lobectomy i.e. removal of right or left lobe along with isthmus. A total of 10 patients (20%) underwent total thyroidectomy while 4% underwent Hartley's Dhunhill procedure. Subtotal thyroidectomy was done in one and simple excision of nodule was done in one patient.

Post operative complication during hospital stay

Complications	No. of patients	% age
Wound infection	2	4%
Seroma	2	4%
Hypoparathyrodism	6	12%
Haemorrhage	0	0%
Transient RLN Palsy	4	8%
Permanent RLN Palsy	1	2%
Hypothyrodism	1	2%
SLN injury	1	2%
Wound Oedema	2	4%
Rare injury (Apical Lung Injury)	1	2%

Hypoparathyrodism was encountered in12% patients, followed by transient RLN in 8% cases. Two cases 4% had wound infection as also seroma and wound edema in same number of patients. Hypothyrodism, SLN injury and apical lung injury was seen in one patient each. One patient had permanent RLN injury and required tracheostomy for its management.

Late complications (n=49)

Complication	No. of patients	% age
Hypothyroidism	11	22%
Hypoparathyroidism	9	18%
Voice change	1	2%
Pain	5	10%
Recurrence	2	4%

During follow up, eleven (22%) were found to have hypothyroidism while 9 (18%) had hypothyroidism. Patients with both of these complications required long term conservative treatment. Incidentally two patients having benign swelling initially were found to have papillary carcinoma on histopathology and needed further action.

DISCUSSION

Most of the complications of thyroid surgery arise out of injury to vital structures in the neck. The incidence of wound infection is much higher than (4%) than previous studies by Bergenfelz et al.[2] in 2008 (1.6%) and Rosato et al.[3] in 2004 (0.3%). It may be due to less number of total cases i.e. 50, so it appers relative percentage. Wound infection noted 5-6 days after surgery and was managed by opening sutures and saline lavage along with antibiotics. The incidence of seroma formation in present study is comparable to Kowalski's series[4] i.e. (4%). Seroma was drained and healing was good in both cases.

In present study, hypoparathyroidism was present in 6 (12%) patients during hospital stay and 3 new patients detected in addition to these 6 patients during follow up, making a total of 9 patients. The clinical features of hypoparathyroidism noticed after 3rd post operative day in the form of circumoral numbness and tingling sensations,that was managed initially by intravenous calcium followed by oral calcium and vitamin D_3. Among 9 patients, 6 patients had undergone total thyroidectomy. Since hypoparathyroidism is a preventable complication particularly in surgery for benign thyroid disorder, such an incidence of 18% calls for meticulous care and dissection during surgery. This incidence of 18% closely resembled the finding of Sakorofas et al.[5] study with incidence of 17.7% and lower than that of Gourgiotis's et al.[6] study (21.6%).

An observation of 10% incidence of RLN during thyroid surgery resembled that of Wegner and Seiler et al. study (8.3%) 1994.[7] Out of this 4 patients (8%) were found to have transient injury, leaving an actual incidence of 2% in our study and resembles other previous studies. The only case of permanent RLN injury was a case of papillary carcinoma where one side RNL was already gone as found in indirect laryngoscopy. The other side i.e. left side was found to be embedded and infilterated by malignancy and frequent handling during surgery in an attempt to separate it resulted in loss of function of this nerve, eventually necessitating tracheostomy after 4 days.

There is very low incidence of hypothyroidism i.e. 22% as compared to various previous studies Michie et al.[8] in 1974, Hedley et al.[9] in1983. The relative low incidence can be ascribed to meticulous dissection and not fiddling with other side lobe when only one lobe needed to be removed. All patients were prescribed l-thyroxine and dosages were stabilized by serial thyroid profile estimation. External branch of SLN is liable to injury due to proximity to superior thyroid artery. In the present study, SLN injury was noted only in 1% patients (2%). In present study, post operative haemorrhage was not found even in a single case. This is because of excellent haemostasis.

CONCLUSION

In the present study, most common surgery performed was hemithyroidectomy / lobectomy (72%) followed by total thyroidectomy in 20% cases. Hypoparathyrodism was most common early complication following thyroid series (12%) of patients, followed by transient recurrent laryngeal nerve palsy (8%) of patients. Hyopothyrodism was most common late complication following thyroid surgery (22%) of patients, followed by hypoparathyrodismin 18% of patients. Complications of thyroid surgeries have been reduced considerably from its early days. Incidence of mortality is almost zero but morbidity is still continued. Prompt recognition of complications and its remedy can limit the morbidity in thyroid surgery.

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