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RESEARCH ARTICLE

THYROID SURGERY IN DEPARTMENT OF OTORHINOLARYNGOLOGY AND HEAD AND SURGERY-STANLEY MEDICAL COLLEGE -AN AUDIT

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ABSTRACT

Objective: To assess the clinical presentation, surgical management of thyroid disorders and complication of thyroid surgeries in the tertiary care set up.
Methods: This article is an audit of the thyroid surgeries performed in the Otorhinolaryngology-Head and Neck Surgery (ORL-HNS) department of Stanley Medical College and General Hospital, Chennai- 01, during the 6 year period from 2010 to 2017. The data was recorded on a pre designed proforma which comprehensively encompassed the relevant variables and outcome, which was interpreted systematically.
Results: 178 Thyroid surgeries have been performed during this period of which were 106 total thyroidectomies and the remaining 72, hemi-thyroidectomies. Solitary nodular goiter of the thyroid was the most common benign disease encountered while papillary carcinoma was the common malignant disease of thyroid diagnosed.
Conclusion: Thyroid disorders was prevalent among the population and it commonly affects younger females. Solitary nodular goiter was commonest cause and hemi thyroidectomy was most frequently performed surgery, the complications were minimal with experienced hands.

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INTRODUCTION

Thyroid disorders are common in general population and palpable nodules are reported to be present in 4-7 % of adult population. From 2010 to 2017 February totally 178 thyroidectomies were performed in the department of ENT in Stanley medical college. Of which 106 were hemi thyroidectomy, 72 were total thyroidectomy. The most common cause we encountered was solitary nodular goiter for all of which hemi thyroidectomies were performed. The most common malignancy encountered were papillary carcinoma of the thyroid and rarely follicular carcinoma. The number of patients with thyroid related issues who present themselves in the OPD is on the rise nowadays possibly due to increasing awareness among the public.

MATERIALS AND METHODS

The audit was conducted in the department of otorhinolaryngology and head & neck surgery, Stanley medical college, Chennai from the year 2010 to February 2017. All adult patients who presented with thyroid disorders were underwent routine clinical examination, all basic investigation and some specific investigation to arrive at an initial diagnosis and based on which patient was taken up for surgical procedure. The outcome measured include common age and gender of presentation with thyroid disorder, post-operative morbidity due to complications, comparison of preoperative and postoperative histological diagnosis. Initial diagnosis was made on the basis of history, physical examination, routine investigations (complete blood count, renal function test, liver function test, chest X ray, echocardiogram, urine routine examination, coagulation profile, viral markers) and specific investigations(ultra-sonogram of neck, fine needle aspiration cytology ,thyroid function test). Post-operative specimens were subjected to histopathological examination. All patients who had toxic goiter were rendered euthyroid before subjecting them to surgical procedure. All patients were hospitalized before surgery. The operative procedure undertaken was decided according to the type of thyroid disorder. (Hemi thyroidectomy for all solitary nodular goiter, total thyroidectomy for multinodular goiter and malignancy). All procedure were undertaken under general anaesthesia and in a standard operating theatre condition. Post operatively patient managed in a standard post-operative ward. In the immediate postoperative period patient was watched for any bleeding and any airway embarrassment. Complete blood count and serum calcium was evaluated on next morning of surgery. Drain was removed 48 hrs. after surgery.

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Patient usually discharged on sixth postoperative day after suture removal. Thyroid function tests are usually performed six weeks following surgery.

RESULTS

Sex distribution

Out of 178 thyroidectomies performed 170 patients were female and only 8 patients were male. This constitutes 95.50% female and 4.49% of male distribution.

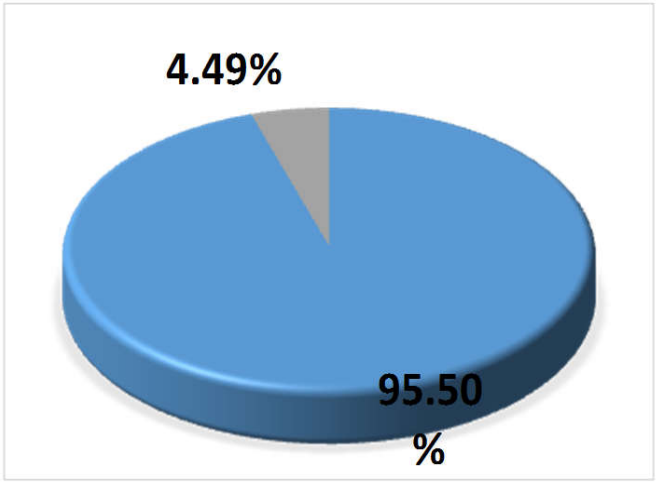

Figure 1. Pie chart showing sex distribution

Age distribution

When the patients presented to us were divided according to their age of presentation into decades. Most of patients we managed comes under the 3rd decade that is

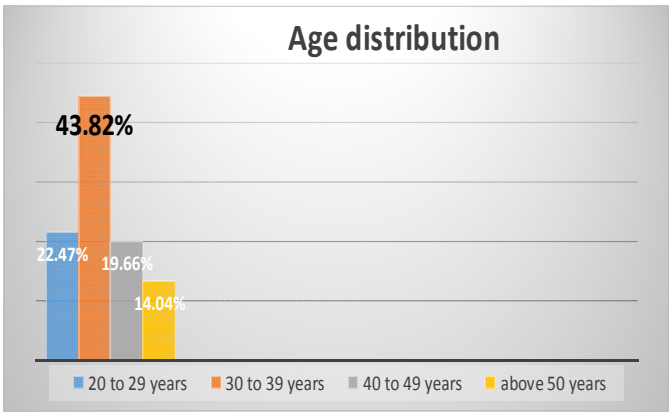

Figure 2. Bar chart showing age distribution

Between 30 to 39 years. And 14.04 % of thyroidectomies which were performed above the age of 50 years that cases and nearly half of them that is 9 cases were carcinoma for which total thyroidectomies were done.

Preoperative diagnosis

The most common cause of thyroid swelling we encountered was solitary nodular goiter (59.55%). Next is multinodular goiter (35%) Carcinomas are rare and we had 8 patients with papillary carcinoma and one patient with follicular carcinoma (0.56%).

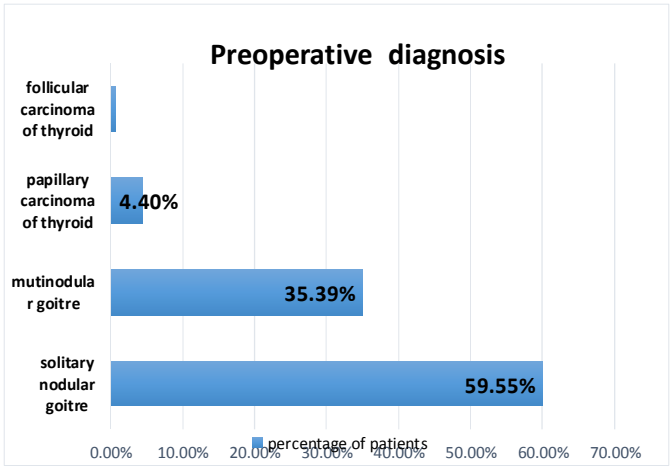

Figure 3. Bar diagram showing distribution of preoperative diagnosis

Hemi vs total thyroidectomy

Out of 178 thyroidectomies, 106 cases were hemi thyroidectomy which constitutes 59.55 % all of them was performed for solitary nodular goiter which was the most common indication for thyroidectomy in our department. 72 cases were total thyroidectomy which accounts for 40.44% of which 63 cases (35.39%) were done for multinodular goiter and 9 cases (5.05%) were for carcinoma of thyroid.

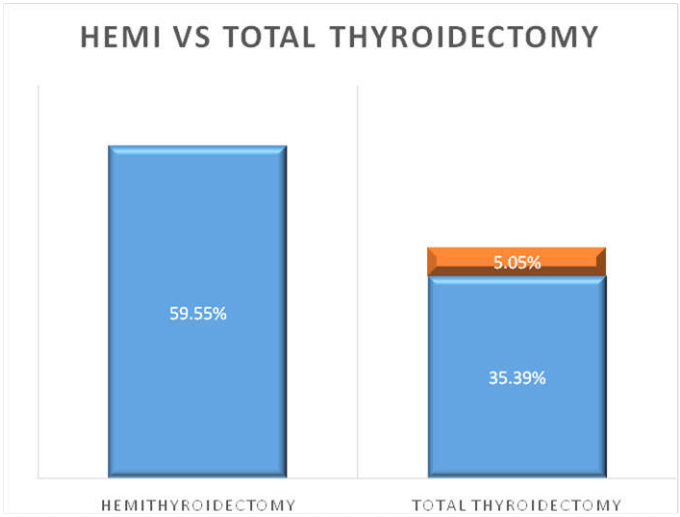

Figure 4. Bar diagram comparing hemi vs total thyroidectomy

Post operative histopathological diagnosis

38.20 % of patients showed colloid nodular goiter, 20.22%% patients showed benign adenoma, 33.15 % patients with multinodular goiter, 6.17% with papillary carcinoma, 0.56% follicular carcinoma.

Comparison of pre op fnac report with post op histopathological report

Pre-operative fnac post-operative hpe
106 solitary nodular goiter ------ > 68 colloid goiter
36 benign adenoma
2 papillary carcinoma
63 multinodular goiter -------- > 62 multinodular goiter
1 papillary carcinoma

8 Papillary carcinoma --------- > 8 papillary carcinoma
1 follicular carcinoma --------- > 1 follicular carcinoma

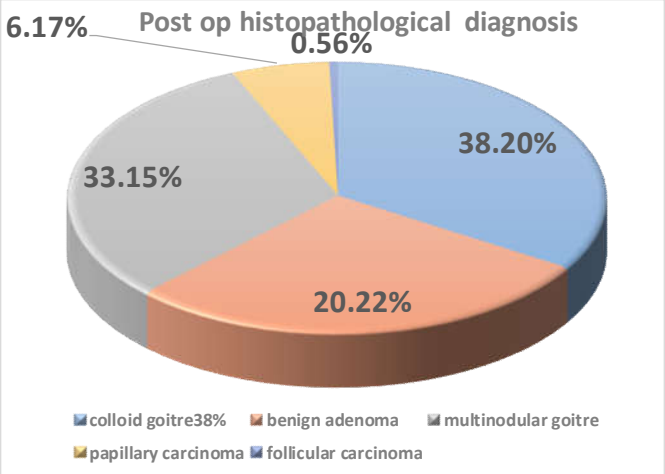

Figure 5. Showing post op histopathogical diagnosis

Completion thyroidectomy

Postoperatively based on histopathological report

Two solitary nodular goiter for which hemi thyroidectomy was performed the postoperative hpe report turned out to be papillary carcinoma of thyroid. Hence completion thyroidectomy was performed for these patient.

Operative and post operative complications we encountered

- Out of 178 thyroidectomies, only two patients developed left vocal cord palsy. Both are cases of total thyroidectomy performed for papillary carcinoma of thyroid. Accounts for 1.21% of patients.

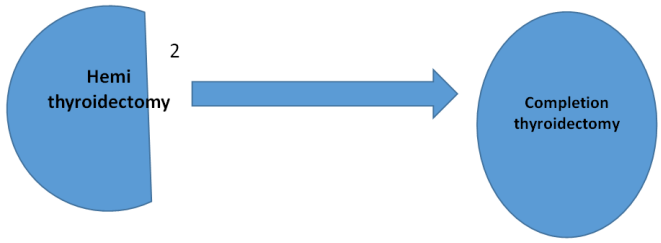

Figure 6. Pie diagram showing distribution of complication

- Two patient had transient hypoparathyroidism (1.21 %%) following total thyroidectomy performed for 1 papillary carcinoma and one multinodular goiter. These patients treated with calcium supplementation and completely recovered.
- In one case of total thyroidectomy performed for papillary carcinoma of thyroid due to excessive infiltration of the trachea, tracheal cartilage was incidentally opened during surgery and it was repaired on table by anastomosis.

DISCUSSION

Thyroid disorders constitute one of the most common surgical problem among the general population. In the west, endocrine surgery has emerged as a distinct specialty, in our country general surgeons and otorhinolaryngologist continue to perform thyroid surgeries. In our study females were more come commonly affected than males. Which is supported by literature and other studies. Our study showed frequent involvement of adult between the age group of 30 – 39 years that is in their 3rd decade. But the malignancy was reported to be common among the older age group that is above 50 years of age. In our study the common presentation was solitary nodular goiter compared to multinodular goiter and malignancy of thyroid. This was based on preoperative fnac report .however postoperatively when specimens were subjected to histopathological diagnosis there was minimal variations. Two solitary nodular goiter for which hemi thyroidectomy was performed was turned out to be papillary carcinoma and hence completion total thyroidectomy for performed for those two cases. In our study majority of cases underwent hemi thyroidectomy since our most common presentation was solitary nodular goiter. Routine surgical procedure were followed in our department and intraoperative complication were rare during the surgery. All patient were made euthyroid before taking for surgery which also minimized the complication.

The preoperative evaluation with complete basic investigation and some specific investigation is mandatory before posting the patient for surgery. This also helps to rule out any comorbidities and to take appropriate steps to manage those conditions hence minimizing the complications. Our study had 1.21% rate of vocal cord paralysis and 1.21% rate of temporary hypocalcemia. The most common reported and most feared complication is recurrent laryngeal nerve damage and the average palsy rate in the literature is less than 2 percent. The incidence of temporary hypoparathyroidism in the literature is approximately 1 0-20 percent and is often an inevitable consequence of total thyroidectomy. However, the incidence of permanent hypoparathyroidism should be definitely less than 5 percent and this may be reduced by sound anatomical knowledge, surgical technique and experience. A review of literature reveals comparatively increased incidence of Hypoparathyroidism following total thyroidectomy compared to a hemi- and sub-total thyroidectomy. Some authors suggest adopting meticulous micro-surgical operative techniques and practicing parathyroid auto transplantation (PTAT) post-thyroidectomy to prevent post-operative hypocalcemia. Recurrent laryngeal nerve palsy may be the result of number of iatrogenic injury mechanism. For instance, it may be caused by direct section, thermal injury by cautery or by suture entrapment of the nerve. It may also be secondary to neuropraxia or formation of perineural fibrous tissue. The best way to safeguard the nerve is to either stay away from its course as in hemi thyroidectomy or to identify to its full extent as in total thyroidectomy. In our cases we usually identify the nerve. In two case of palsy we encountered the nerve could not be identified as those were cases of papillary carcinoma and tracheal infiltration was present.

Conclusion

Out of 178 thyroidectomy surgeries performed only two patients developed vocal cord palsy this was possible only because meticulous surgical techniques, surgical experience and sound knowledge of surgical anatomy of neck. Also the duration of surgery has been reduced from 2 hours in the initial period to 1 hour now for total thyroidectomy and 30 mins for

hemi thyroidectomy. Thyroid surgery is safe in otorhinolaryngology department with low morbidity, short hospital stay and no in hospital; mortality.

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Incidental cancer in multinodular goitre post thyroidectomy

Post-thyroidectomy tracheomalacia: minimal risk despitesignificant tracheal compression

Preventing nerve damage during thyroid surgery Balasubramanian Thiagarajan

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Technique of Thyroidectomy *Daniel Oertli*

Thyroid surgery and disease:an audit from the orl-hns department of Stanley medical college and general hospital. By dr.srikamakshi dr t Balasubramanian,dr n seethalakshmi

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