

Clinico-Pathological Study of Thyroid Swellings and Their Management

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ABSTRACT

Thyroid pathology as well as surgery has always fascinated clinicians from ages. There is a wide spectrum of presentation of thyroid pathologies which ranges from localized swelling to varied systemic manifestations of the disease seen in all age groups. Aim of our study is to know age, sex, histo-pathological distribution with operative procedure instituted to patients along with its complication. This is a retrospective study conducted in our institution from January 2004 to December 2009 involving 69 patients. We include patients of all age and sex groups with palpable thyroid swelling with or without cervical lymphadenopathy. Our results showed female preponderance (92.75%) with peak age of distribution between 30 to 40 years of age. Predominant histopathology was multinodular goiter (53.62%) followed by colloid goiter (34.83%). Hemithyroidectomy was the most common operative procedure carried out with post operative complication rate of 7.25%. Clinical diagnosis should always be supplemented with biochemical, FNAC, radionuclide scan and ultrasonography to avoid unnecessary and inadequate surgery. Pre operative patient preparation and identification of anatomical structures intra operatively are required for successful outcome of the thyroid surgery.

Keywords: Colloid goiter, Fine needle aspiration cytology, hemithyroidectomy.

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Introduction

Thyroid disease is common and yet the management of both thyroid swelling and its functional abnormalities are highly controversial. Many aspects of thyroid management have not been subjected to randomized clinical trials and most treatment protocols are based on personal experience or retrospective studies. [1] There is increase incidence of thyroid cancers particularly in the eastern region of India. [2]

So, it is imperative to study incidence, causative factors, geological distribution, treatment options and post operative complications for successful management of thyroid disorders. Roger Frugardi in 1170 first described thyroid surgery when medical treatment failed. With the effort of Emil Theodor Kocher and C.A. Theodor Billroth thyroid surgeries were revolutionized and now thyroid surgeries became a mainstay of treatment for both benign and malignant lesions. With increasing number of surgeries being performed many intra and post operative complications became apparent. [3] Treatment of these complications and prevention of recurrence of the disease became new concern for clinicians. [4] In our study we try to understand the nature and histological presentation of thyroid swelling as well as their management.

Material and methods:

This study includes retrospective and prospective study of all operative cases of thyroid swelling at our institution from 2004 to 2009. Total 69

patients were included in this study who underwent some form of thyroid surgery.

Inclusion criteria:

- All ages and both sexes are included.
- Patients with palpable thyroid swelling.
- Patients with cervical lymphadenopathy whose fine needle aspiration reports revealed papillary carcinoma thyroid.

Exclusion criteria:

- No thyroid swelling suggestive of hypo or hyperthyroidism.
- Physiological goiter
- Thyroglossal cyst
- Recurrent thyroid swelling

Patients with thyroid swelling presenting to surgical OPD were evaluated by detailed history taking, through clinical examination and appropriate investigations like fine needle aspiration cytology, ultrasonography and thyroid scan. Patients presenting with hypo or hyperthyroidism, medical therapy was started to attain euthyroid state. Various operative procedures were performed like hemithyroidectomy, near total thyroidectomy and total thyroidectomy with or without neck dissection. Operative complications in intra or post operative period were diagnosed and managed accordingly.

Results:

Our results were based on clinicopathological study and operative procedures carried out in 69 patients from 2004 to 2009. Out of total (n=69) patients, 64 were females (92.75%) and 5 were males (7.25%). The age distribution of patients was 4 of 11-20 years (5.80%) ,16 of 21-30yrs(23.19%) , 19 of 31-40 years (27.54%) , 15 of 41-50yrs(21.74%) , 10 of 51-60 years(14.49%) ,5 of 61-70yrs(7.25%). (Figure-1)The peak incidence was seen in the age group of 31-40yrs with median age of 35years. Clinically, thyroid swellings presented as 32(56.38%) cases of colloid goiter, 29(42.03%) cases of multinodular goiter, 6(8.70%) cases of solitary thyroid nodule and 2(2.90%) cases of thyroid carcinoma. The fine needle aspiration results of 34(49%) was multinodular goiter, 25(36%) was colloid goiter, 6(9%) cases of carcinoma, 4(6%) cases of follicular adenoma. (Figure-2) In 65cases (78.95%) the fine needle aspiration report was confirmed by post operative histopathological report. The operative procedures performed in the 69 operated

cases were as follows. 41 cases (59.24%) underwent hemithyroidectomy. 23 cases (33.33%) underwent subtotal thyroidectomy and 5cases (7.25%) near total thyroidectomy. (Figure-3) The incidence of intra-operative complications was 2(2.90%). Both were primary hemorrhage and there were no reported cases of injury to recurrent laryngeal or superior laryngeal nerve. The incidence of post operative complications was 5(7.25%). There were 3(4.35%) cases of parathyroid insufficiency, 1(1.45%) case of secondary hemorrhage and, 1(1.45%) case of wound infection. (Figure-5) The histo-pathological findings of operated specimen were 33(47.83%) multinodular goiter, 24(34.78%) cases of colloid goiter, 5(7.25%)cases of follicular adenoma, 3(4.35%) cases of papillary carcinoma, 1(1.45%) case of medullary and follicular carcinoma each and 2(2.90%) cases of thyroiditis. (Figure-4)

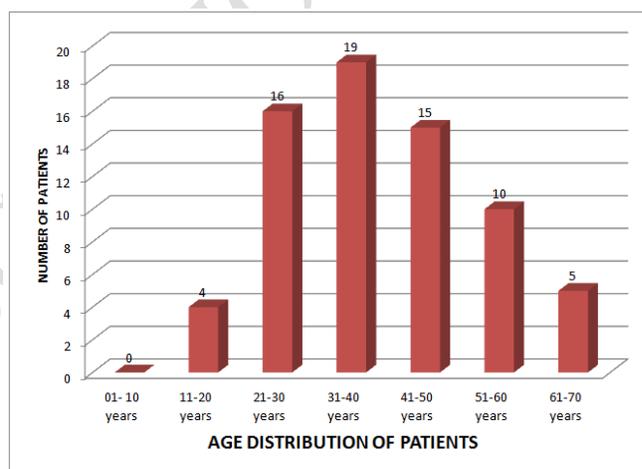


Figure-1: Age distribution of patients

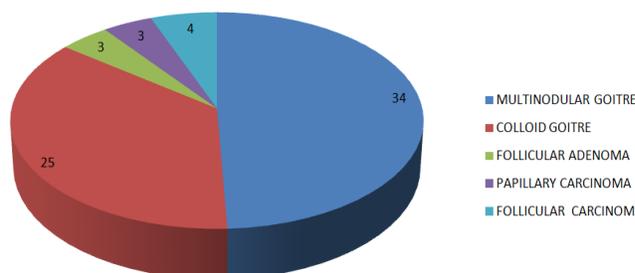


Figure-2: Fine needle aspiratiom cytology reports

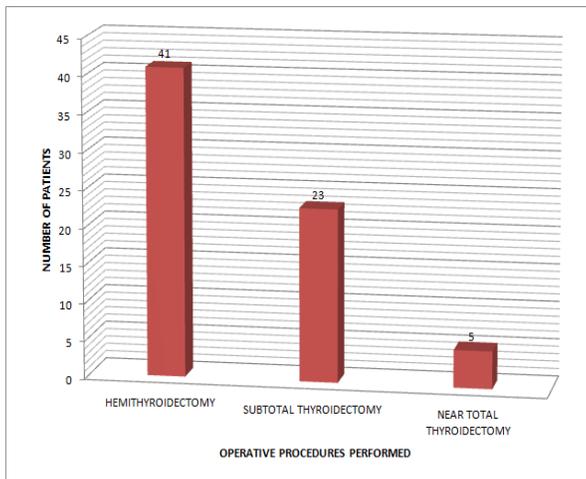


Figure-3: Operative procedures

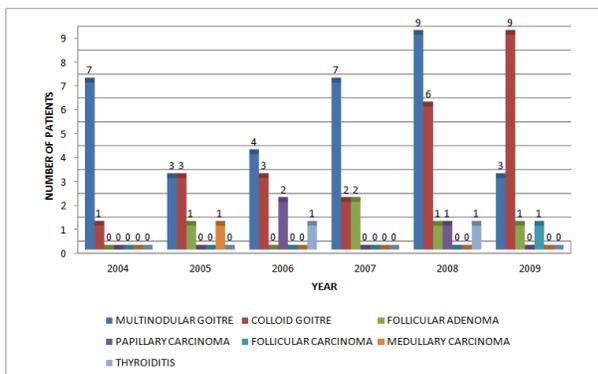


Figure-4: Histology reports of operated specimen

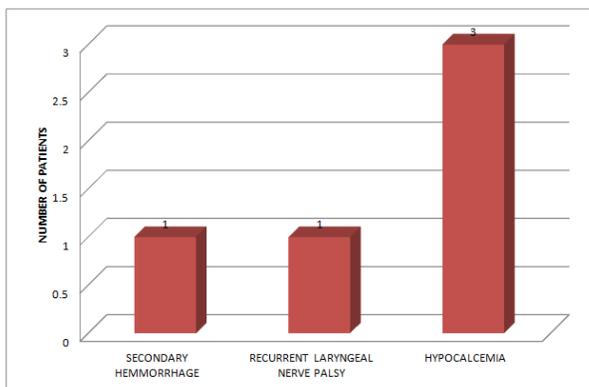


Figure-5: Post operative complications

Discussion:

Thyroid swelling arises due to various etiological factors such as age, sex and residential distribution. [5] Exposure to radiation is fast becoming

the main causative factor in the industrialized nation. The effects of the Chernobyl are still found in increasing number of reports of papillary carcinoma thyroid in Turkey. [6] Radio ablation of thyroid gland as a treatment for hyperthyroidism is reported to predispose thyroid carcinoma in a minority of cases. [7] As with all conditions, an accurate diagnosis is dependent upon an adequate history, clinical examination and relevant investigations. [8] In this retrospective or prospective study of thyroid swellings, there was a clear preponderance of females to males (92.755) affected with thyroid pathologies. This finding is consistent with almost all literatures regarding thyroid study. The highest incidence of thyroid swellings was found in the age group of 21-40years (50.73%) with a median of 35years. This result is comparable to the results obtained by Bapat et al in a study of 334cases of thyroid goiter in Western India. [9] In 65 cases fine needle aspiration cytology report was confirmed by the post operative histo pathological report. The positive predictive value of fine needle aspiration was 94.20%. This result is comparable with Bapat et al study of 105 Uninodular Goiters FNAC was found to be 75% sensitive and 100% specific. [10] Fine needle aspiration cytology missed 1 case of malignancy. The overall incidence of multinodular goiter was 33(47.83%) which was the highest. Colloid goiter was 24(34.78%). 5 cases (7.25%) of follicular adenoma and 3(4.35%) cases of papillary carcinoma were found. 1(1.45%) case each of medullary and follicular carcinoma was found. The operative procedure that was performed the most was hemithyroidectomy followed by subtotal thyroidectomy. Complications were seen in the case of both subtotal and near total thyroidectomies. However the overall incidence of complications was 7.25% and revision surgery had to be done in 1 case as it was missed by fine needle aspiration cytology. Fine needle aspiration cytology continues to be initial investigation of choice in thyroid swellings. [11] The incidence of carcinoma in multinodular goiter has been reported 5 to 10 %. [12] So, in those cases subtotal or near total thyroidectomy is the right choice. For retro sternal extension of thyroid swellings, cervical approach is the most common approach. [13]

Conclusion:

Thyroid swelling is a disorder of female with most common presenting age is between 21-40yrs. Most common clinical diagnosis was of multinodular goiter and majority of them were euthyroid on presentation. Fine needle aspiration cytology was the most reliable investigation. Hemithyroidectomy was the

most common surgical procedure performed which is an adequate, technically easy and safer procedure. It is recommended that in order to avoid unnecessary surgery and to implement adequate surgical clearance when need arises clinical diagnosis should be supplemented by other diagnostic modalities like fine needle aspiration cytology, radionuclide scan and ultrasonography. It is also found that adequate pre operative preparation of the patient before thyroid surgery avoids both intra operative and post operative complications. Caution exercised on the part of the surgeon in identifying the important anatomical structures like recurrent laryngeal nerve and parathyroid glands during surgery reduces serious complications.

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