

Original Research Article

Profile of thyroid lesions presenting at a tertiary care health centre of North India: 2-year pilot study (2018-2019)

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Received: 18 March 2020

Revised: 18 April 2020

Accepted: 20 April 2020

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ABSTRACT

Background: Diseases of thyroid are of great importance since most of them are amenable to surgical or medical management. Objective of this study was to study the incidence, gender profile, intervention undertaken, fine needle aspiration cytology and histopathological profile of thyroid lesions and correlation of FNAC and HPE studies done after surgical intervention.

Methods: This is a prospective study of the patients with thyroid swelling presenting to the head and neck clinic of otorhinolaryngology and head and neck surgery, Dayanand Medical College, Ludhiana over a time period of 2 years (January 2018 to November 2019). All the cases were subjected to a thorough clinical examination followed by evidence-based interventions. Fine needle aspiration cytology was done in all the cases preoperatively as out-patients basis and histopathologically confirmed postoperatively.

Results: There were 80/212 subjects presenting in outpatient head and neck clinics of otorhinolaryngology and head and neck services of Dayanand Medical College and Hospital over a period of two years (January 2018 to December 2019). 57 were benign pathologies and 23 malignant. Multinodular goiter was commonest amongst benign (45 cases/78.9%) and papillary carcinoma (19 cases/82.6%) amongst malignant pathologies. Hemithyroidectomy was done in 41 patients (51.2%) while total thyroidectomy was done in 20 patients (25%) while total thyroidectomy with lymph node clearance was done in 19 patients (23.7%). Lymph node involvement was seen in 21.7% (5 cases out of 23 malignant) patients. Fine needle aspiration cytology finding and histopathological examination diagnosis could be correlated in 75 patients (93.75%).

Conclusions: Benign lesions are more common than the malignant and amongst malignant papillary carcinoma is the commonest necessitating lymph node clearance.

Keywords: Hemithyroidectomy, Lymph node, Multinodular goitre, Thyroid

INTRODUCTION

The gland of Kocher, the thyroid, largest of all endocrine glands, is of concern when its functional integrity is disturbed or anatomy becomes disproportionate. The latter is the commonest presentation with prevalence of thyroid nodules, 4%-10% in adults and 0.2%-1.2% in children.¹ Malignant pathology is seen in only 5%-30% of thyroids. Most of the thyroid nodules belong to the non-

neoplastic category.² WHO, manual emphasizes that iodine deficiency accounts to goitre in 7% of the world population.³ With India being the largest goitre belt in the sub Himalayan region. Thyromegaly can be multinodular, solitary or diffuse goitre.

The incidence of thyroid nodules has shown a marked rise in the recent decade primarily due to the wider application of neck imaging. Therefore, the incidental

finding of a thyroid nodule, the “incidentaloma”, in an asymptomatic population is not rare. Nowadays the aim of evaluating these nodules is to identify those with a malignant potential.

Obstructive complaints due to tracheal or esophageal compression and change in the voice can be the usual presentation. Isolated lower cervical cosmetic deformity, is often the only presenting complaint.

Fine needle aspiration cytology (FNAC) is the gold standard. The only diagnostic test for pre-operative evaluation as it is simple, cost effective, and a quick to perform as an outpatient procedure. The patient compliance too is good. FNAC has its limitations, in differentiating between benign and malignant follicular neoplasms. Incidence of thyroid neoplasms is high in both men and women with higher preponderance in women.

Objectives

To study the incidence, gender profile, intervention undertaken, fine needle aspiration cytology and histopathological profile of thyroid lesions and correlation of FNAC and histopathological examination (HPE) studies done after surgical resection.

METHODS

This is a prospective study of individuals with swelling of the thyroid presenting to the head and neck clinic of otorhinolaryngology and head and neck surgery Dayanand Medical College and Hospital, Ludhiana. The period of the study was 2 years i.e., (January 2018 to November 2019).

Inclusion criteria

Patients presenting with thyroid swelling confirmed as thyroid pathology (both benign and malignant) on Fine needle aspiration cytology.

Exclusion criteria

Patients amenable with medical therapy, thyrotoxic and hypothyroid.

Incidence, gender profile, intervention undertaken, fine needle aspiration cytology and histopathological profile of thyroid lesions and correlation of FNAC and HPE studies done after surgical intervention were analysed. Ethical approval of the study was taken from the Institutional Ethics Committee.

Statistical analysis

All statistical calculations were done using statistical package of social sciences (SPSS) 17 version statistical program for Microsoft windows (SPSS Inc. released 2008. SPSS statistic for windows, version 17.0, Chicago).

RESULTS

The study included 80 subjects who presented to the ENT head and neck clinic with a FNAC confirmed thyroid swelling; over a period of 2 years (January 2018–November 2019). All patients were evaluated by clinical examination followed by routine investigations. X-ray neck (lateral view), thyroid profile, ultrasonography and computed tomography. A computed tomography neck with contrast was carried out in patients suspected of metastasis and those with large thyroid swelling to rule out neurovascular invasion.

Table 1: Incidence of thyroid tumours.

Total head and neck neoplasm	Thyroid tumour
212 patients	80 patients

Thyroid tumours comprise 37.7% (80/212) of all head and neck tumour patients presenting at our head and neck clinic over a period of 2 years (2018–2019). Female patients outnumbered the male.

Table 2: Gender profile.

Gender	No. of cases	Percentage
Male	19	23.75
Female	61	76.25
Total	80	100.00

Out of 80 patients, 57 were reported as benign on HPE. These included benign nodular goitre in 55 patients and thyroiditis in 2 patients. 23 patients out of 80 were reported to have malignant nodule on HPE, among which 19 were papillary and 3 were reported as follicular carcinoma. Among 23 malignant swellings, 5 were found to have lymph node involvement (positive on HPE) with level 2, 3 and 4 being involved most commonly.

Table 3: Type of thyroid swelling (FNAC).

Type of thyroid swelling	No. of cases	Percentage
Benign	62	77.5
Malignant	18	22.5

A total 62 patients had benign pathology while 18 had malignant pathology on fine needle aspiration cytology.

Hemithyroidectomy was done in 41 patients (51.2%) while total thyroidectomy was done in 20 patients (25%) while total thyroidectomy with lymph node clearance was done in 19 patients (23.7%).

Out of 80 patients, 57 were reported as benign on histopathological specimen.

Multinodular goitre was commonest amongst benign (45 cases/78.9%) pathology followed by follicular adenoma (12.2%).

Table 4: Type of surgical intervention.

Surgical intervention	No. of cases	Percentage
Hemithyroidectomy	41	51.2
Total thyroidectomy	20	25
Total thyroidectomy with lymph node clearance	19	23.75
Total number of cases	80	100

Table 5: Histopathological examination.

Thyroid swelling	No. of cases	Percentage
Benign	57	71.25
Malignant	23	28.75
Total	80	100

Table 6: Type of benign pathology on HPE.

Type of benign lesion	No. of cases	Percentage
Multinodular goitre	45	78.9
Hashimoto thyroiditis	4	7
Hurthle cell adenoma	1	1.7
Follicular adenoma	7	12.2

Table 7: Type of malignant pathology on HPE.

Type of malignancy	No. of cases	Percentage
Papillary	19	82.6
Follicular	3	13
Lymphoma	1	4.3
Total	23	100

Papillary carcinoma (82.6%) was the most common carcinoma followed by follicular carcinoma (13%) and lymphoma (4.3%).

Table 8: Lymph node involvement in thyroid pathology.

Pathological lymph node involvement	No. of cases	Percentage
Present	5	23
Absent	17	77

Pathological lymph node involvement was seen in 23% of the malignant pathology.

Table 9: Level of lymph node involvement.

Level of lymph node	No. of cases	Percentage
Level I, II	1	20
II, III, IV, V	1	0.2
II, III, VI	3	0.6
Total	5	12.5

Level ii, iii, vi lymph nodes were the commonest involved among pathological lymph node involvement. All 5 were cases of papillary carcinoma.

Table 10: FNAC and HPE co relation.

FNAC and HPE correlation	No. of cases	Percentage
Present	75	93.75
Absent	5	6.25

FNAC and HPE correlation was seen in the 93.75% of the patients.

DISCUSSION

Thyroid lesions can be non-neoplastic and neoplastic. Among the non-neoplastic lesions, common ones encountered are hyperplastic lesions like multinodular goitre and inflammatory lesions like lymphocytic thyroiditis and hashimoto thyroiditis. Neoplastic lesions can be benign tumors like adenoma or malignant tumours like papillary carcinoma thyroid, follicular carcinoma, medullary carcinoma, anaplastic carcinoma and hurthle cell carcinoma.

Among the present study thyroid tumours comprise 37.7% (80/212) of all head and neck tumour patients presenting at our head and neck clinic over a period of 2 years (January 2018 to December 2019) with 76.2% being female patients. The female preponderance is similar to other studies done by Sengupta and Welker.^{4,5}

Multinodular goiter is the most common disease diagnosed clinically, by FNAC and histopathologically as comparable to previous studies done by Tsegaye et al, Nggada HA et al, and Sushel et al.⁶⁻⁸

Table 11: Male and female ratio.

	Sengupta et al ⁴	Welker et al ⁵	Present study
M:F ratio	4:1	4:1	3.2:1

Incidence of benign pathology is higher (57 cases/71.25%) as compared to malignant (23 cases/28.75%). These results are similar to study done by Keh et al.⁹

Hemithyroidectomy was done in 41 patients (51.2%) while total thyroidectomy was done in 20 patients (25%) while total thyroidectomy with lymph node clearance was done in 19 patients (23.7%).

Multinodular goitre was commonest amongst benign (45 cases/78.9%) pathology followed by follicular adenoma (12.2%). Papillary carcinoma (82.6%) was the most common carcinoma followed by follicular carcinoma (13%) and lymphoma (4.3%) in this study.

Fine needle aspiration cytology and histopathological examination correlation was seen in the 93.75% of the patients but was absent in 5. These patients who were

diagnosed as benign pathology as multinodular goitre in 2 and follicular adenoma in 3 were diagnosed as follicular carcinoma and papillary carcinoma on histopathological examination later on.

Lymph node involvement was seen in 5 out of 23 malignant cases (21.7%) with level 6, 2 and 3 being involved most commonly. Wang et al, reported the involvement of central compartment (level 6, 7) followed by spread to lateral compartment (level 2, 3 and 4) in papillary thyroid carcinoma.¹⁰

Amarasinghe, documented in their study on papillary thyroid carcinoma that among the patients with nodal disease, 13 had a single nodal group involvement and the majority of these were level 4 nodes (46.2%). Central node (level 6) involvement was found in nine (15.3%) patients 3.75%).¹¹

CONCLUSION

Benign lesions are more common than the malignant and amongst malignant papillary carcinoma is the commonest necessitating lymph node clearance.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Munjal M, Tuli N, Rishi P, Singh H, Talwar S, Sharma S, et al. Profile of thyroid lesions presenting at a tertiary care health centre of North India: 2-year pilot study (2018-2019). *Int J Community Med Public Health* 2020;7:1717-20.