Original Research Article

Etiological & Clinico-pathological study of thyroid swellings in NMCH , Sasaram

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Abstract

Background: The present study was conducted to assess clinico-pathological profile of thyroid swellings at a medical school in South-west Bihar.**Materials & Methods:** The present study was conducted in the department of general surgery of a medical college situated in southwest Bihar from 2015-2020 on 240 patients with Thyroid swellings. Various investigations like thyroid function test (TFT) (T3,T4 and TSH), Anti TPO antibodies, FNAC of thyroid swelling, USG of neck, X ray neck AP/ lateral, Indirect laryngoscopy was performed. **Results:** Out of 240 patients, males were 76 and females were 164, male : female ratio is 1:2.15 Clinically diffuse non- toxic goiter was seen in 80, non- toxic MNG in 52, toxic MNG in 34, toxic solitary nodule in 25, toxic diffuse goiter in 15, carcinoma in 19 patients and thyroiditis in 15 patients. 68.74% patients is in between 30-60 yr. age group. Out of 240 pt. 132 were operated. Most common operation done was Hemithyroidectomy which was done on 47 patients (35.60%), followed by Sub- total thyroidectomy on 42 patients (31.81%). Papillary carcinoma is most common malignancy which was found in 15 patients (78.94%) out of 19 cases of thyroid malignancies .Post operative complications, transient hypocalcemia found in 8 pts., transient hoarseness of voice occurs in 6 pts., post operative bleeding in 2 pts.**Conclusion:** we had found that in south-west bihar region females were more frequently affected with thyroid swelling than male, of which diffuse non toxic goiter was the most common presentation. Most patients are in there 3rd to 5th decade of age along with papillary carcinoma which was the most common malignancy found in this region. We have also found that USG guided FNAC gives more accure preoperative diagnosis when compared with post operative final histopathological report along with its limitation.

Key words: Thyroid swelling, Goiter, Solitary nodule

Introduction

Thyroid gland is a very important endocrine gland. Thomas Wharton first coined the term “thyroid”. The word thyroid is derived from the Greek “thyros” meaning “shield” because it was initially thought to protect the larynx. Normal thyroid gland is impalpable[1]. Enlargement of thyroid gland is most common manifestation of thyroid disease.

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Thyroid swellings present as single or multiple nodules within the thyroid gland and remain a common clinical problem and have a reported prevalence of 4% to 7% in the general population[2]. The incidence of thyroid swellings are increasing in recent years due to goitrogens and changing food habits. The enlargement may be either localized or generalized, which may be toxic or nontoxic. The development and application of FNAC has been helpful in distinguishing benign from malignant nodules and in screening patients for surgery [3]. Frable in 1983 used the FNAC as a means of diagnosing most thyroid masses as either neoplasm or goitre nodules. But it has some limitations, particularly it is not able to differentiate between follicular adenoma and carcinoma.

Histopathological examination remains the "gold standard" method for the confirmation of the preoperative diagnosis of FNAC[4].

Ultra-sonography is also widely used to assess the thyroid swelling due to non-invasive, low cost, easily availability, non- ionizing nature. USG guided FNAC has improved diagnostic accuracy[5].

The present study was conducted to assess clinico-pathological profile of thyroid swellings.

Materials & Methods

The present study was conducted in the Department of general surgery NMCH on 240 patients being admitted in Narayan Medical College & Hospital with Thyroid swellings. Duration of study was 5 years. Institutional Ethical clearance was obtained. Data such as patient age, sex, etiologies (simple goiter, MNG, Thyroiditis, Malignanacy etc) based on pathological features and clinical finding was recorded. The patients underwent routine blood investigations, Blood Urea, Serum Creatinine, HIV, HBsAg, Urine Routine, ECG, Chest X ray and specific investigation like TFT (T3,T4 and TSH), Anti TPO antibodies, USG guided FNAC of thyroid swelling with USG of neck, X ray neck AP/ lateral, Indirect laryngoscopy.

Results

Table 1: Distribution of patients

Total- 240		
Gender	Males	Females
Number	76	164

Table 1 shows that thyroid swelling were most common in females.

Table 2:Age distribution

Age group	number	Percent (%)
<20 yrs	3	1.25
21-30 yrs	55	22.91
31-40 yrs	71	29.58
41-50 yrs	62	25.83
51-60 yrs	32	13.33
61-70 yrs	15	6.25
>70 yrs	2	0.83

Majority of cases 68.74% was in between 30-60 yrs. And most common age group is 31-40 yrs with 29.58% cases.

Table 3: Comparison of clinical diagnosis with that of radio-pathological correlation

Clinical diagnosis	Number	percentage
Diffuse non- toxic goiter	80	33.33
Non- toxic MNG	52	21.66
Toxic MNG	34	14.16
Toxic solitary nodule	25	10.41
Diffuse toxic goiter	15	6.25
Carcinoma	19	7.91
Thyroiditis	15	6.25
Total	240	100

Table 3 shows that clinically diffuse non- toxic goiter was seen in 80, non- toxic MNG in 52, toxic MNG in 34, toxic solitary nodule in 25, toxic diffuse goiter in 15, carcinoma in 19 patients and thyroiditis in 15 patients.

Table 4:FNAC based diagnosis

Diagnosis	Number	Percentage (%)
Colloid Goiter	102	42.5
MNG	84	35
Thyroiditis	18	7.5
Pappilary carcinoma	17	7.08
Colloid cyst	10	4.16

Follicular adenoma	6	2.5
Medullary CA	2	0.83
Hurthle cell CA	1	0.41

Table 4 shows that FNAC detected diffuse colloid goiter was the most common finding followed by MNG. Hurthle cell CA was the least common finding.

Table 5:Post operative HPE based final diagnosis

Diagnosis	Number (Total=132)	Percentage (%)
MNC	70	53.03
Colloid goiter	39	29.54
Papillary CA	15	11.36
Follicular adenoma	4	3.03
Medullary CA	2	1.51
Hurthle Cell CA	1	0.75
Follicular CA	1	0.75

In south west Bihar region MNC was the most common cause for the thyroid surgery and Hurthle cell CA and follicular carcinoma was the least common histo-pathological finding which correlated well with pre-operative USG guided FNAC finding.

Table 6:Operative treatment done

Name of Surgery	Number (total=132)	Percentage (%)
Hemithyroidectomy	47	35.60
Subtotal thyroidectomy	42	31.81
Total thyroidectomy	25	18.93
Near total thyroidectomy	18	13.63

Table 6 hemithyroidectomy was the most common performed surgeries and near total thyroidectomy was least performed.We found that average hospital stay was 5.4 days. Re-exploration of wound was done in 2 cases for bleeding due to slip ligature. Post-operative hypocalcemia occured in 8 patients for which intra-venous calcium gluconate was given initially then patients kept on oral calcium supplements. All were recovered well and maximum duration of treatment was 2 months. Transient hoarseness of voice occurred in 6 patients and all were recovered well with corticosteroid and speech therapy was required in 1 patient.

Discussion

The nontoxic goiter is divided on etiological basis as endemic goiter and sporadic goiter. The endemic goiter is defined as one where more than 10% of population shows thyroid enlargement [6]. Seema patel et al[12] did a study and concluded that females having more incidence of thyroid diseases. In our study Male: Female ratio is 1:2.15. In present study we found that out of 240 patients, males were 76 and females were 164 with male : female ratio 1: 2.15. And this has been attributed to variation of thyroid hormones during female reproductive function and physiological events such as puberty, pregnancy and lactation. A thyroid enlargement whether diffuses or in the form of a nodule has to be investigated to rule out neoplasm. USG guided FNAC is the first line of investigation and others like ultrasound, thyroid function test, thyroid scan and antibody levels are done subsequently with an aim to select who require surgery and those that can be managed conservatively[7].The limitations of cytology are well recognized in the diagnosis of some thyroid malignancies in particular is not able to differentiate between follicular adenoma and carcinoma and also in the detection of some papillary carcinomas because of associated thyroid pathologies including MNG thyrotoxicosis and marked cystic changes[9]. The present study was conducted to assess clinico-pathological study of thyroid swellings in south west Bihar.Lawrence W et al[10] did a study and observed that less than 5% of all adults will have palpable thyroid nodule. More than 95% of thyroid nodules are benign. In our study 92.1% are benign and 7.9% thyroid swellings are malignant . Estimation of Thyroid stimulating hormone is useful for confirming euthyroid state. USG guided FNAC was most efficient pre

operative diagnostic tool for thyroid swelling. Misdiagnosis was more with follicular neoplasms compared to other thyroid lesions by FNAC.We found on the basis of clinical finding and pre-operative evaluation diffuse non- toxic goiter was most common presentation and was seen in 80 pts, non- toxic MNG was presented in 52 pts., toxic MNG was presented in 34 pts., toxic solitary nodule was present in 25 pts, toxic diffuse goiter was there in 15pts, carcinoma was presented in 19 patients. Mangesh Ram Padmawar et al [11] did a study and observed that multinodular goiter is common in 2nd& 3rd decade of life and in females similarly we have also found that MNG was most common in 3rd decade of life. Pre-operative evaluation with USG and FNAC can minimize the extent of surgery to be performed. We found that USG guided FNAC detected diffuse non- toxic goiter in 102 cases, multi-nodular goiter in 84 cases, thyroiditis in 18 cases., papillary carcinoma in 17 cases, colloid cyst in 10 cases, follicular adenoma in 6 cases, medullary carcinoma in 2 cases, Hurthle cell carcinoma in 1 case. Hariprasad. S. et al[1] did a study and concluded that thyroid lesions are more common in females and in the age group of 3rd& 4th decade, male-female ratio was 1:2. Multinodular goiter was the most common non-neoplastic lesion and Papillary carcinoma was the most common neoplastic lesion. FNAC is a very useful test in the diagnosis of thyroid lesions. Our results are comparable to his study.

Conclusion

Similar to the Indian subcontinent data we also had found that in south-west bihar region females were more frequently affected with thyroid swelling than male, of which diffuse non toxic goiter was the most common presentation. In concordance with the other literature we had also found that most patients are in there 3rd to 5th decade of age along with papillary carcinoma which was the most common malignancy found in this region. We have also found that USG guided FNAC gives more accure preoperative diagnosis when compared with post operative final histopathological report along with its limitation.

Conflict of Interest: Nil
Source of support:Nil

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