

ANALYSIS OF MULTIVARIATE GOITRES: RETROSPECTIVE STUDY IN A TERTIARY CARE CENTRE

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ABSTRACT Objectives: To evaluate demographic profile, risk factors, clinical presentation, and pathological features of thyroid swellings diagnosed and managed at our tertiary care hospital. The study aimed to compare the following parameters pre and post-surgery. The following parameters were noted Type of Goitre, clinical symptoms, Biochemical status (thyroid profile), surgical complications, and post-op status-comparison between FNAC and histopathological report. **Materials and Methods:** A total of 127 cases of thyroid swellings on examination from March 2018 to May 2020 in BLDE(DU) Shri BM Patil Medical College Hospital and Research Centre, Vijayapura, were included. The medical records were retrieved, studied and analysed retrospectively with regards to the type of goitres, clinical symptoms, Biochemical status (thyroid profile) at the time of presentation and surgical complications. Histopathological details were analyzed. **Results:** Most cases were noted in the 41-60yrs age group, with female predominance and solitary nodules being the most common. Hemithyroidectomy was the predominantly done surgery, and nodular goitre was seen in the final histopathological report in most of the cases. **Conclusions:** In our study, we concluded that USG and FNAC findings of the thyroid goitres had higher sensitivity and specificity in detecting thyroid tumours, but it has low sensitivity for follicular carcinoma, as observed in our study, the discrepancy between FNAC and HPR.

KEYWORDS Surgery, thyroid, FNAC

Introduction

Thyroid goitres are discrete lesions within the thyroid gland, radiologically distinct from surrounding thyroid parenchyma, commonly seen in women and older populations, frequently discovered in clinical practice, either during physical examination or incidentally (thyroid incidentalomas), during various imaging procedures[1]. Goitrogenesis and thyroid neoplasia are essential to understanding a reasonable approach to thyroid nodules. Most thyroid nodules are not clinically recognized.

Many nodules come to clinical attention because of their large size, anterior position in the neck, or because of the skill of the physician performing the examination[2]. Most clinically apparent nodules are benign, and clinically apparent thyroid cancer is uncommon, with 80% of all primary thyroid malignancies accounted by differentiated thyroid cancer. Thyroid nodules are clinically important for several reasons, including thyroid dysfunction and, rarely, compressive symptoms, but they are primarily important because of the need to exclude thyroid cancer. Evaluation and management of thyroid goitres remain an area of controversy[3]. The initial evaluation should always include history and physical examination focusing on features suggestive of malignancy. Serum thyrotropin (TSH) and thyroid ultrasonography (US) are pivotal in evaluating thyroid nodules providing important information regarding thyroid nodule functionality and the presence of features suspicious of malignancy, respectively.

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Table 1 Showing the Clinical presentation of the patients.

AGE (IN YRS)	<20	1
	20-40	26
	41-60	66
	61-80	33
	>80	1
SEX	MALE	21
	FEMALE	106
PAST HISTORY	HYPERTHYROIDISM	6
	HYPOTHYROIDISM	6
	RADIATION EXPOSUE	1
	NOT SIGNIFICANT	114

Table 2 Mentioning the Examination and the functioning status of the thyroid.

SIZE OF THE SWELLING (Cms)	2-5	39
	5-7	72
	7-10	14
	10-13	2
TYPE OF GOITRE	SOLITARY	75
	MULTI NODULAR	51
	FOLLICULAR	1
CONSISTANCY	SOFT	29
	CYSTIC	35
	FIRM	61
	HARD	2
FUNCTIONAL STATUS	HYPO THYROID	13
	HYPERTHYROID	13
	EU THYROID	101

Table 3 The examination and biochemical findings.

SYMPTOMS	DYSPHAGIA	4
	STRIDOR	6
	CHANGE IN VOICE	9
	ASYMPTOMATIC	108
CO MORBIDITIES	HYPERTENSION	5
	TYPE 2 DM	26
	NIL	96
BIO-CHEMICAL	HYPO THYROID	2
	ELEVATED T3	4
	ELEVATED T4	2
	LOW TSH	3
	ELEVATED T3 T4	4
	NORMAL	112

Table 4 Surgery is done, FNAC and Final Biopsy report correlation.

SURGERY	HEMI THYROIDECTOMY	79
	SUBTOTAL THYROIDECTOMY	26
	NEAR TOTAL THYROIDECTOMY	5
	TOTAL THYROIDECTOMY	16
	ISTHEMECTOMY	1
FNAC	DIFFUSE	0
	CYSTIC	69
	SOLID	46
	COLLOID	12
	NEOPLASTIC	0
HPR	NODULAR GOITRE	72
	MNG	39
	ADENOMATOID NODULE	6
	COLLOID GOITRE	9
	NEOPLASTIC	1

Fine needle aspiration (FNA) biopsy is the most accurate and reliable tool for diagnosing thyroid malignancy and selecting candidates for surgery, particularly if performed under ultrasound guidance[4].

Malignancy cannot be safely excluded as cytology findings of approximately 25% of the cases of FNA biopsies will fall into an indeterminate category. Preoperative diagnosis of indeterminate thyroid nodules can be improved by using panels of gene mutations and molecular markers combined with the cytologic diagnosis, reducing the number of unnecessary surgeries. Elastography and 18F-fluorodeoxyglucose positron emission tomography (18FDG-PET) scanning are still under investigation. The reported prevalence of malignancy in thyroid nodules evaluated by biopsy ranges from 4.0% to 6.5% and is largely independent of the nodule size[5,6].

Material and Methods

It was a Retrospective study from March 2018 to May 2020 done at B.L.D.E. (Deemed to be University) Sri B. M. Patil medical college hospital and research centre, Vijayapura, India.

127 cases of thyroid swellings on examination from March 2018 to May 2020 in BLDE(DU) Shri BM Patil Medical College Hospital and Research Centre, Vijayapura, were included. The medical records were retrieved, studied and analysed retrospectively with regards to the type of goitres, clinical symptoms, Biochemical status (thyroid profile) at the time of presentation and surgical complications. Histopathological details were analyzed.

All characteristics were summarized descriptively. The summary statistics of mean± standard deviation (SD) were used for continuous variables. The number and percentage were used for categorical data in the data summaries and diagrammatic presentation. Data were analyzed using SPSS software v.23 (IBM Statistics, Chicago, USA) and Microsoft Office 2013.

Results

Total samples collected: 127. Of these, males 21 (16.53%) and females are 106(83.47%). The age of the patients ranged from 18-70 years old, with the mean age being 48.72

Discussion

Thyroid nodules are among the most common neck swellings noticed in middle-aged and older females (100/127). In our study, most patients were middle-aged females with swellings of different sizes and at different sites. Clinically the most common presenting symptom was swelling without any other symptoms of hypo or hyperthyroid manifestations (108/127). As per the data retrieved, only a few patients had any history or family history (13/127). USG and FNAC or usg guided FNAC were the primary investigations to identify the type of thyroid lesion. Most of the patients had benign thyroid nodules varying from single to six, with an average of 2.4 per person. Although most of the patients presented with symptomless benign thyroid nodules, surgery was preferred in our centre in view of the high incidence of malignancy in this region. Histopathological findings of the swellings were almost similar to FNAC reports, with only one discrepancy where follicular malignancy could not be identified.

Our study's limitation is a follow-up of the patient after being discharged, as proper medical records could not be retrieved. The incidence we found may thus be lower than the actual incidence. However, the overall rate corresponded to previous reports of clinically relevant studies.

Conclusion

Our study concluded that USG and FNAC findings of the thyroid goitres had higher sensitivity and specificity in detecting thyroid tumours. However, it has low sensitivity for follicular carcinoma, as observed in our study, the discrepancy between FNAC and HPR. Therefore, early detection and surgery with necessary tumour margins and follow-up were necessary for identifying and preventing the malignant transformation of thyroid goitres.

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