

Thyroid Surgery in Shaikh Zayed Hospital, Lahore

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This prospective study was carried out at the Department of Surgery Shaikh Zayed Hospital, comprising 71 patients undergoing surgery for thyroid disorders over a period of one year (1991). Simple multinodular goitre was the commonest thyroid disorder (74%). Thyrotoxicosis was encountered next (18.3%). Secondary thyrotoxicosis was more common (12 cases) than the Grave's disease (one case). Incidence of clinically solitary nodule was 40.9%. Malignancy was seen in 7.05%, being more common in females. The incidence of true solitary nodule (preoperative evaluation) was 24% whereas the incidence of malignancy in true solitary nodule was 17.64%, much higher than the overall incidence. This calls for the early management of solitary nodules. Subtotal thyroidectomy was the commonest operation performed (50%), followed by lobectomy and isthmectomy (40%). The outcome of surgery is encouraging as morbidity and mortality is low. Patient selection, appropriate work-up, preoperative preparation in thyrotoxic patients and sound surgical technique are the hallmarks of success in thyroid surgery, which is well within the scope of a general surgeon.

INTRODUCTION

Thyroid diseases are amongst the commonly encountered disorders in surgical practice. About 10 million United States citizens are estimated to have a nodular goitre¹. Palpable nodules can be found in 4 to 7 percent of American adults, whereas ultrasonography can identify nodules in upto 50 percent of adults more than 50 years of age². Goitre is detected in 5% of school aged children in North America³. Whereas in the Western world, endocrine surgery is becoming a superspeciality, in Pakistan general surgeon is responsible for the management of thyroid disorders. This prospective study was carried to determine the nature of the pathology, mode of presentation and outcome of surgery for various thyroid disorders encountered in local population.

PATIENTS AND METHODS

Total of 71 patients were admitted for thyroid disorders requiring surgery from January to December, 1991. 21 were male and 50 were female. All patients belonged to Lahore or its immediate

periphery. Preoperative evaluation was carried out in the surgical outpatients. Specific workup included EKG, IDL, Total serum T₁ and T₃ estimations, Radio-Iodine uptake test and scintiscan. Fine needle aspiration cytology, available towards the later part of study, was carried out only selectively in patients with clinically solitary nodules. Thoracic inlet X-Rays were obtained in huge goitres. Patients with toxic goitres were initially treated with antithyroid drugs with or without β -Blockers and operated upon only when they were clinically euthyroid.

RESULTS

Out of total of 71 patients, 50 were females (70.42%) and 21 were males (29.58%) with a male to female ratio of 1:2.3. The age group ranged from 10-70 years with mean age of 37 years. Mean age for males was 36 (range 10-65 years) and for females 39 (range 14-70 year). Distribution of the type of goitre in both sexes is given in Table 1.

Most of the patients with benign simple multinodular goitre presented only for cosmetic reasons. Only 9 patients with MNG (16% of MNG, 12.6% of total) presented with pressure symptoms in

the form of dyspnoea or dysphagia. Average weight of the thyroid gland resected was 95 gm in 43 patients without pressure symptoms and 200 gm in 9 patients with pressure symptoms.

Table 1: Sex incidence.

Disease	Male	Female	Ratio
Simple MNG*	18	35	1:1.9
Toxic Goitre	2	11	1:5.5
Malignant	1	4	1:4
Total	21	50	1:2.3

*Multinodular goitre

Table 2: Results of fine needle aspiration cytology.

	No. of Patients	Percentage
Total Cases	12	
Conclusive (Positive)	7	58.3
Carcinoma	3	
Benign Cyst	1	
Follicular Adenoma	3	
Inconclusive	5	41.7
Follicular Adenoma	4	
Hashimoto's Thyroiditis	1	

In addition to goitre the commonest presentation in toxic cases was palpitation (61.5% of toxic cases). Heat intolerance and loss of weight were found in another 56%. Only 2 patients (15.4%) with thyrotoxicosis had exophthalmos. Out of 13 toxic cases, only one had Grave's disease, 12 were those of secondary thyrotoxicosis in MNG.

Functional status of thyroid as determined by thyroid profile (T_3 , T_4): 1 (1.4%) patient was hypothyroid, 57 (80.28%) were euthyroid, and 13 (18.30%) were hyperthyroid.

Clinically solitary nodule was seen in 29 patients (40.9%) but the true incidence of solitary nodule was 24% as determined after surgery.

Incidence of malignancy: Of 71 patients, 66 (92.95%) were benign, 20 males and 46 females. 5 patients (7.05%) had thyroid cancer, 1 male and 4 females.

I^{131} uptake was carried out in all 71 patients. All 13 patients with thyrotoxicosis were diagnosed on I^{131} uptake, which were later confirmed on hormonal assay. Thyroid scan was performed in 60 patients and hormonal assay in 52 patients. EKG in toxic cases revealed sinus tachycardia in only 3 patients. Fine needle aspiration cytology carried out in 12 cases was found to be correct in 7 patients on postoperative histopathology. The results of fine needle aspiration cytology are shown in Table 2.

Indications for surgery

The various indications for surgery are shown in Table 3.

Table 3: Indications for surgery.

Indication	No. of Patients	Percentage
Cosmesis	13	60.5
Thyrotoxicosis	13	18.3
Pressure Symptoms	9	12.6
Suspicion of Malignancy	6	8.45

Procedures

Subtotal thyroidectomy was performed in 35 patients (49.2%). Lobectomy and isthmectomy was performed in 29 patients (40.8%). Total thyroidectomy was carried out in 6 patients (8.45%) for the suspicion of malignancy, 5 of which proved to be malignant. Near-total thyroidectomy was performed in only one patient (1.4%). Various procedures carried out are shown in Table 4.

Table 4: Operations performed on thyroid.

Operation	No. of Patients	Percentage
Subtotal thyroidectomy	35	49.29
Lobectomy & Isthmectomy	29	40.84
Total thyroidectomy	6	8.45
Near-total thyroidectomy	1	1.10

Histopathology

Simple MNG with areas of colloid degeneration was reported in 53 cases (74.6%). Among toxic goitre (13), 9 (12.67%) were found to be MNG with

overactive internodular thyroid tissue, 3 (4.22%) as toxic adenomas and only 1 (1.4%) as Grave's disease. Of the malignant cases (5), 3 (60%) were differentiated follicular carcinoma and 2 (40%) were differentiated papillary carcinoma. The overall incidence of malignancy was 7.05%. The incidence of malignancy in true solitary nodules was 17.64%. Out of 17 patients with a solitary thyroid nodule, 3 were malignant, 4 were simple thyroid cysts (23.52%) and 10 were colloid adenomas (58.82%). The results of histopathology are shown in Table 5 and 6.

support for 18 days. This patient developed wound infection and bronchopneumonia and later on died of respiratory failure (mortality 1.4%). Two patients (2.8%) undergoing subtotal thyroidectomy had transient hypocalcemia requiring intravenous calcium during the first postoperative week.

Table 7 Morbidity.

Complications	No. of Patients	Percentage*
Chest infection	2	2.8
Hematoma	2	2.8
Transient hypocalcemia	2	2.8
Wound infection	1	1.4
Recurrent laryngeal N. injury	1	1.4

Table 5: Histopathology.

Pathology	No. of Patients	Percentage*
Simple MNG**	53	74.6
Toxic Goitre	13	18.30
a. Overactive inter-follicular thyroid tissue	9	12.67
b. Toxic Adenoma	3	4.22
c. Grave's disease	1	1.4
Carcinoma	5	7.05
a. Follicular	3	4.22
b. Papillary	2	2.81

*Percentage calculated against total number of cases).

**Multinodular goitre

Table 6: Histopathology in 17 cases of solitary thyroid nodule.

Disease	No. of Patients	Percentage
Colloid Adenoma	10	58.82
Simple Cysts	4	23.52
Carcinoma	3	17.64

Follow-up

All the 71 patients discharged from the hospital reported at 3 months, while only 60% showed up at 6 months. At the end of 1 year only 1/3rd were available for follow up. There were no postoperative problems as regards altered thyroid function or recurrence of goitre.

DISCUSSION

Thyroid enlargement is one of the most common disorders of the endocrine system⁴. The indications of thyroid surgery are mainly large goitre with or without pressure symptoms and suspicion of malignancy in thyroid nodules^{4,5}. The present study consisting of 71 patients, managed over a period of one year may be taken as a sample of the problem encountered in our community.

Our data shows a marked female preponderance both for toxicity and malignancy. The main presenting symptoms were goitre, toxicity and goitre with pressure symptoms. This mode of presentation is similar to that quoted by Roher and Gortezki from Germany⁶.

The etiology of diffuse goitre can be determined by clinical examination and thyroid profile. Radioactive Iodine uptake is a useful investigation with high sensitivity as is reflected from our study. We would therefore recommend its use in the evaluation of the functional status of thyroid gland

Morbidity and mortality (Table 7)

Two patients (2.8%) developed chest infection requiring medication. Postoperative hematoma was found in another 2 cases (2.8%). Recurrent laryngeal nerve damage was seen in one patient (1.4%) who underwent total thyroidectomy for a huge multinodular goitre. That same patient had tracheal collapse due to tracheomalacia in the immediate postoperative period and required ventilatory

for screening patients with toxicity. This is in agreement with an earlier report from Friedman et al⁷.

Thyroid nodules require tissue diagnosis to exclude malignancy⁵. The role of FNA in tissue diagnosis of thyroid nodules is becoming more reliable. Pre-operative diagnosis of cancer can be of great help to select operative modality. Our current policy is to get FNA in all the solitary or dominant nodules, prior to surgery. In this study FNA provided a rather low definitive diagnosis compared to published reports. The reported efficacy of FNA in the diagnosis of thyroid nodules is over 90%⁸⁻¹². The interpretation of FNA in case of thyroid is difficult and services of a good cytopathologist are mandatory. It is hoped that with further experience and availability, FNA will assume a leading role in the diagnosis of thyroid nodules.

The overall incidence of malignancy (7.04%) in this study is towards the lower range compared to published reports from this region¹³ (Table 8) and elsewhere^{1,9,11,12}. However the incidence of malignancy in solitary nodules is in accordance with the reported range of 8-28%¹³⁻¹⁶. Yamashita et al, in a large study from Japan carried over 3000 patients reported the incidence of carcinoma as 29.4% in goitre, 21% in thyroiditis, 8.6% in adenoma and 5.3% in toxic goitre¹⁷.

suspicion of malignancy. We subscribe to the view that total thyroidectomy is the procedure of choice for thyroid cancer if diagnosed preoperatively with FNA^{5,17,18}. The controversy in the management of thyroid nodules is yet unresolved. We agree with those who believe that lobectomy is the least requirement in treating clinically solitary nodule (benign). When paraffin section reveals the tumor as intrathyroidal, no further surgery is justified unless there are foci of cancer in the resected lobe¹⁸. In the present study total lobectomy was the second common procedure performed in all patients with clinically solitary nodule, where FNA was not available or inconclusive. All patients with thyroid cancers were of differentiated types (3 follicular, 2 papillary) which is in accordance with the published figures^{13,19,20}. The outcome of surgery in our experience is satisfactory with an overall morbidity of 10% and mortality of 1.4%. The incidence of recurrent laryngeal nerve damage is low (1.4%) and is comparable with studies from other centres^{1,21}. This supports our policy of identifying the recurrent laryngeal nerve only in total lobectomy or total thyroidectomy. It is noteworthy that all the major complications occurred in one patient, who required ventilatory support and later died.

Though the follow-up in our patients is short (only 40 patients (57%) completing 6 months and 1/3rd at one year), there were no late problems. The poor response to follow-up is the characteristic of our patient population.

We therefore conclude that thyroid surgery is safe and successful in the hands of General Surgeons with special interest in thyroid surgery.

Table 8: Incidence of malignancy (Goitre) from Punjab (PAK)

Author	Total Cases	Malig- nant Goitres	Overall Percen- tage	% in Solitary Nodules
Shah HA, Shah SH, Nishar Hospital, Multan, 1986 ¹³	267	52	19.48	29
Present Study, S.Z. Hospital, Lahore, 1991	71	5	7.04	17.6

Subtotal thyroidectomy was the most common procedure performed, lobectomy with isthmectomy being next common. Total and near-total thyroidectomy were performed mainly on the

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