Original Article

Clinico-pathological pattern of thyroid disease treated surgically

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Objective: To report clinico-pathological pattern of thyroid disease treated surgically at at ertiary care hospital.

Methodology: This retrospective descriptive study was conducted at Chandka Medical College Hospital, Shaheed Mohtarma Benazir Bhutto Medical University Larkana, Pakistan from January 2008 to December 2013. The data were collected from hospital records and included demographic data, clinical presentation, preoperative and postoperative laboratory investigations, per operative findings, post operative complications, duration of hospital stay, morbidity and mortality if any. Data were analyzed using SPSS.

Results: A total of 460 patients were included in the study; 432 were females and 28males, with female to male ratio of 15:1. The mean age was 37.5 years. The definitive diagnosis was made on histopathology. Benign lesions were found in 84.34% patients (n=388) cases and malignant in 15.66%(n=72) cases. Papillary carcinoma was found to be the most common malignancy (70%), followed by follicular carcinoma and anaplastic carcinoma (13% and 7% respectively). The most common operative procedure was subtotal thyroidectomy, in 322 patients, followed by total thyroidectomies and lobectomies with or without isthmusectomy in 40, and 44 cases, respectively. The most common complication was respiratory tract infection (9.78%), hypoparathyroidism (3.48%) and recurrent laryngeal nerve injury (2.83).

Conclusion: Multinodular goiter was the most common type of goiter admitted for surgery followed by solitary thyroid nodule. The most common surgical procedure performed was subtotal thyroidectomy followed by lobectomy with isthmusectomy and total thyroidectomy. Majority of goiters are benign. The most common malignant goiter is of papillary carcinoma, followed by follicular. (Rawal Med J 2014;39:406-410).

Key words: Goiter, thyroid, thyroidectomy, thyroid cancer.

INTRODUCTION

Thyroid disorders are amongst the common endocrinological disorders encountered in surgical practice, with marked variation in prevalence in different parts of world. The highest incidence is found in mountainous areas of Himalayas and Andes or areas of iodine deficiency.[1] In Pakistan, the highest incidence is reported in northern areas.[2] Patients with thyroid disorders present variably with asymptomatic/symptomatic nodular or diffusely enlarged glands. The symptoms may be of hormone deficiency or excess with or without complications. The incidence of thyroid lesion whether benign or malignant is more common among females and increases with age.[3,4] This study aims to describe the clinico-pathological patterns of thyroid disease treated surgically at a tertiary care hospital, and to provide an insight into this disorder in local population, since the true incidence in this area is not known.

METHODOLOGY

From January 2008 to December 2013, the records of all patients of thyroid disease, who underwent thyroid surgery at departments of General Surgery at Chandka Medical College hospital, Larkana, Pakistan were reviewed and data retrieved. All euthyroid patients above 30 years of age, with hospital stay of more than 48 hours were reviewed were included; while patients under 30 or above 70 years, or with hypo/hyperthyroidism clinically or biochemically, or with incomplete records, were excluded.

All patients had preoperative work including

thyroid scintigraphy and thyroid function tests. In patients with single palpable nodule, ultrasound scan and FNAC was done, and CT scan in few selected cases. Surgeries included lobectomy, ishthmustectomy, subtotal, near total or total thyroidectomy-with or without neck dissection. Vocal cords were assessed by anesthetist during extubation and by ENT specialist in case of symptoms development. Postoperative complications, with particularlt RLNP and hypoparathyroidism were noted. All patients with serum calcium levels under 8.0 mg/dl and in were treated for hypocalcimia. All demographic data, clinical presentation, preoperative and postoperative laboratory investigations (thyroid profile, U/S of neck, FNAC serum calcium levels), operative procedure, per operative findings, duration of hospital stay, morbidity and mortality, if any were recorded.

RESULTS

Out of 460 patients, there were 432 females and 28 males; with female to male ratio of 15:1. The mean age was 37.5 years (Fig. 1).

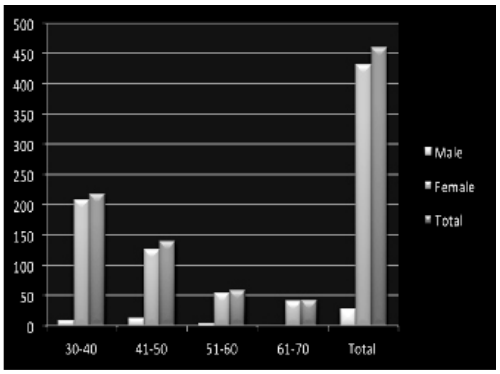

Fig. 1. Age and gender distribution.

Clinically, multinodular goiter (MNG) was the commonest presentation (Fig. 2).

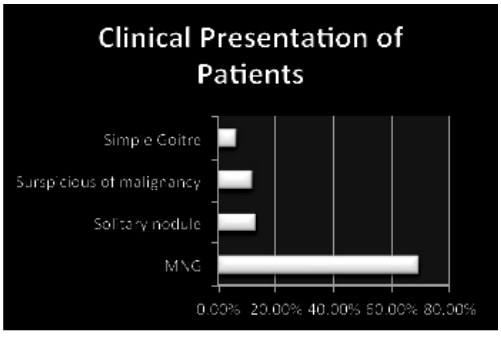

Fig 2. Clinical presentation of goiter.

The most common operative procedure performed was subtotal thyroidectomy in 70% patients, followed by lobectomies (Table 1).

Table 1. Operative procedures performed.

Operative procedure	Number	Percentage
Subtotal thyroidectomy	322	70.00
Lobectomy+isthmusectomy	44	9.57
Total thyroidectomy	40	8.70
Near total tyroidectomy	19	4.13
Incisional Biopsy (inoperable)	15	3.26
Lobectomy	12	2.61
Isthmusectomy	5	1.09
Total thyroidectomy+neck dissection	3	0.65
Total	460	100.00%

The definitive diagnosis was made on histopathology Benign lesions were found in 84.34% patients (n=388) cases and malignant in 15.66% (n=72) cases (Table 2).

Table 2. Histological diagnosis of operated cases of goiter.

Histopathology	Number	Percentage
Benign	**388**	**84.34**
Colloid goitre	24	5.22
Multinodular goiter:	303	65.86
Thyroid cyst	09	1.96
Autoimmune thyroiditis	02	0.43
Hurthle cell adenoma	01	0.22
Follicular adenoma	49	10.65
Malignant	**72**	**15.66**
Papillary carcinoma	51	11.09
Follicular carcinoma	10	2.17
Anaplastic	05	1.09
Medullary	04	0.87
Lymphoma	01	0.22
Sarcomatoid carcinoma	01	0.22
Total	460	100

Papillary carcinoma was found to be the most common malignancy seen in 70% of malignant cases, followed by follicular carcinoma and anaplastic carcinoma (Table 2).

Table 3. Postoperative complications.

Postoperative complications	Number	Percentage
Respiratory tract infections	45	9.78
Hypoparathyroidism/tetany	26	3.48
Seroma	12	2.6%
Wound infections	11	2.39%
Subcutaneous hematoma	01	0.2%
RLN injury	02	2.83
Thyroid storm	00	00

Postoperatively, the most common complication was RTI in 9.78% cases, followed by hypoparathyroidism in 3.48% patients. Seroma and wound infection were found in 2.6 and 2.3% patients respectively (Table 3).

DISCUSSION

According to WHO, 7% of world population is suffering from clinically apparent goiter, with majority of patients in developing countries, where the disease is attributed to iodine deficiency [5] and is predominant among females.[3,4] As in current study, 94% patients were female with male to female ratio of 15:1, which is almost double as compared to that reported in the literature ranging from 2:1 to 9:1.[6,7] The most common thyroid disorder in current study was MNG; this is in accordance with other local studies,[8,9] and studies from Ethiopia,[10] Bahrain.[11,12] However, reports from west[13] suggest simple goitre to be the most common thyroid disorder that particularly occurs in young women in their teens or 20s. This contrast in reports can be attributed to geography and diet. Nodular goitre is highly prevalent in iodine deficient areas,[1,5] a higher incidence of nodular goitre in current study may suggest the possibility of iodine deficiency in Larkana and surrounding areas. Further investigations may be required to evaluate the cause, and pathogenesis in our population.

Histopathological reports in our study revealed benign lesions in 84% cases while only 16% had malignant lesions, which is quite consistent with local[14,15] reports and reports from Yemen[16] and East Africa.[10] The most common benign lesion was nodular colloid goiter, followed by follicular adenoma, which is supported in reports by suster[17] but contrasting to Virk et al,[18] which showed follicular adenomas to be more common than colloid goiter.

Though thyroid cancer is the most common malignant endocrine tumor seen in about 1% of all malignancies.[5] The overall incidence of malignancy in this study was 15.66%, and like most international reports,[19,20] the papillary carcinoma was most common malignant thyroid lesion found in 11% cases. Only one case of lymphoma was found in this study, which is similar to other reports.[19.20] Similarly, only one case of sarcomatoid carcinoma was found, which is a rare histological variant of

anaplastic carcinoma, with an aggressive behavior and poor prognosis. Only 20 cases have been reported in literature so far.[20] Furthermore, malignancy was detected incidentally in 4.23% clinically unsuspected cases of nodular goiter. The possibility of malignancy should be considered in patients with nodular goiter, as thyroid cancer is frequently an unexpected postoperative finding.[21]

Since the risk of malignancy in patients with multiple thyroid nodules is same as that of solitary nodules,[22] patients with nodular goiter should be evaluated according to recommendations by American Thyroid Association. In case of solitary thyroid nodule with suspicious or indeterminate cytology or follicular neoplasms, on FNAC, lobectomy or total thyroidectomy should be performed to exclude malignancy.[22] However, there is still no consensus as to how much thyroid tissue should be left behind.[23] As majority of cases in this study were of MNG, the most common operative procedure performed was bilateral subtotal thyroidectomy followed by total thyroidectomy (TT). There gold standard for treatment of MNG, bilateral subtotal thyroidectomy (BST) has lost popularity. In the recent years, the trends have changed and most surgeons prefer total or near total thyroidectomy (NTT) over BST, which carries the risk of high recurrence rates and increased surgical morbidity in the course of reoperation.[24] Similar trend is observed in surgeons at our institute, with increase in number of TT and NTT in last few years. Recurrent laryngeal nerve palsy (RLNP) is one the most serious complication in thyroid surgery and its

incidence varies from 0% to 4% and has been related to the extent of thyroidectomy, surgical technique, the presence of Graves disease or thyroid carcinoma, reoperation.[25] In the present study, only 2.8% patients developed RLNP, which was transient in both cases and therefore acceptable.

Hypoparathyroidism was noticed in 3.48% cases only, manifested as transient hypocalcemia and was easily managed with oral supplementation of vitamin D and Calcium. The incidence of transient hypocalcemia varies from 6.9-46% while a rate of 0.4-33% is reported for permanent hypoparathyroidism.[25] Hematoma formation and thyroid storm are rare events following thyroid surgery in this era, nonetheless postoperative subcutaneous hematoma may occur in less than 1% cases.[25] Only one case of subcutaneous hematoma and, none of thyroid storm was seen in our study. The operative mortality was zero.

CONCLUSION

Multinodular goiter was the most common type of goiter in our study followed by solitary thyroid nodule. The most common surgical procedure performed was subtotal thyroidectomy followed by lobectomy with isthmusectomy and total thyroidectomy. Majority of goiters were benign. The most common malignant goiter was papillary carcinoma type, followed by follicular.

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Critical revision of the article for important intellectual content: Aijaz Ahmed Memon
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Conflict of Interest: none declared
Rec. Date: Mar 8, 2014 Accept Date: Aug 16, 2014

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