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AN EXPERIENCE WITH THYROID SURGERY IN CENTRAL INDIA

Oncology

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ABSTRACT

Background: Thyroid disorders are one of the most common encountered disease in the hospital. This study was carried out to evaluate the histologic spectrum of surgically treated thyroid disease in Sri Aurobindo Instititute Of Medical Sciences, Indore.

Methods: This study was conducted in Department of Surgical Oncology, Sri Aurobindo Institute of Medical Sciences and included those patients who underwent thyroid surgery for both benign and malignant diseases from year 2015 to 2018.

Results: A total of 35 patients were enrolled out of which 31 were females and 4 were males with sex ratio of 7.75:1. The age range was from 22-86 years. Malignancv was found in 57% of patients where as 43% were benign. Papillary carcinoma was the commonest malignancy where as nodular goiter was commonest benign lesion. Total thyroidectomy was the predominant surgery in 80% of patients. Hypocalcemia was the commonest postoperative complication accounting to 11% .

KEYWORDS

Thyroid cancer, thyroid surgery, Hypocalcaemia, Recurrent laryngeal nerve injury

INTRODUCTION:

Worldwide ,the incidence of thyroid diseases has been increasing considerably and has recently became a issue that is associated with aging, as 66% of patients who were diagnosed with thyroid malignancies were between 20 to 55 years old. Disorders of thyroid are frequent surgical problem affecting approximately one-third of adults[1]. Thyroid management requires comprehensive management focused on excluding thyroid cancer and also on evaluating thyroid function and complications[2]. The initial work up should include proper clinical history and examination, focused ultrasound, thyroid function tests and a FNAC(fine needle aspiration cytology) of swelling or nodule. Incidence of thyroid diseases rose 12 times for females and 1.5 times for males in United States over 6 decades[3,4]. Majority of people diagnosed with thyroid malignancies, have no significant risk factors and the remaining may have one or two of them. Risk factors for thyroid diseases include iodine deficiency, ionizing radiation, hereditary factors and obesity[5]. There has been contrast in prevalence of thyroid malignancies in different parts of the world[6]. Thyroid cancers are the most frequently encountered malignant endocrine disorders, accounting for about 90% of malignant endocrine pathologies. Globally, thyroid surgery is one of the commonest surgical procedure performed. Although till the 20th century postoperative complications prevented its evolution and diffusion but this rate has drastically come down now[8] . Mortality of thyroid surgery is almost nil and overall morbidity is less than 3%. In this study clinical characteristics, demographic features, incidence of thyroid diseases, type of surgery performed and surgical complications were studied in surgically treated patients.

MATERIAL AND METHODS:

This study was carried out at the Department of surgical oncology Sri Aurobindo Institute of Medical Sciences, Indore over a period of 3 years from April 2015 to March 2018. All patients who underwent any sort of thyroid surgery (i.e. hemi thyroidectomy, near total thyroidectomy or total thyroidectomy) were included in this study. Patients were admitted in outpatient department. Patients were thoroughly investigated. Investigations like thyroid function tests, serum calcium, ultrasonography and FNAC were performed. Patients were usually discharged by 3-5 days postoperatively. The data was collected on a pre-designed proforma and entered & analyzed with a statistical program.

RESULTS:

A total of 35 thyroidectomies for various thyroid disorders were performed in the surgical department of SAIMS during the research period were included in this study. Data for all patients were analyzed, which included 31 females and 4 males (88% and 12% respectively) with female to male ratio of 7.75:1.The age of patients ranged from 22-86 years. Malignant lesions were predominant in our study amounting to about 57 %(20) where as benign lesions constituted 43%(15) of patients(Table 1). Papillary carcinoma was found to be the commonest malignant thyroid lesion, observed in 31% all thyroid lesions i.e. 11 patients. This was followed by medullary carcinoma seen in 11% patients. We encountered 1 case of squamous cell carcinoma thyroid which is one of rarest presentation. We also had 1 case of concurrent occurrence of medullary and papillary carcinoma thyroid in a same patient with solitary sternal metastasis of medullary origin. Among benign pathologies multinodular goiter was the commonest which was seen in 14% of patients followed by colloid goiter in 8% of patients. Total thyroidectomy was performed in 80 % (28) of patients whereas hemithyroidectomy was performed in 20 % (7) of patients (Fig 1). There was no mortality in our study. There were 2 case of major morbidity, which was vocal cord paralysis due to the recurrent laryngeal nerve injury. 1 patient had hoarseness of voice preoperatively so recurrent laryngeal nerve was sacrificed in view of tumor involvement. The patient had squamous cell carcinoma on histology where as other patient had papillary carcinoma. 4 patients had RLN paresis which recovered in 3 months. The commonest postoperative complication was hypocalcaemia amounting to 11% of patients. Other complications included permanent tracheostomy in 2(5.8%) patients and wound infection in 1 patient(2.8%).

DISCUSSION:

Thyroid disorders are one of the commonest disorders of the endocrine system. Incidence of both neoplastic and non neoplastic thyroid swellings in surgically treated patients varies from one part of the world to the other based on the risk factors[9,10]. The success of surgery lies upon an intimate knowledge of surgical anatomy with excellent operative exposure and skill of a surgeon to identify and preserve RLN and parathyroid glands.

Thyroid lesions were predominant in females in our study with sex ratio of 7.75:1 which was consistent with studies from Hyderabad, Karachi, Saudi, and the rest of the world reporting a striking female preponderance[6,11,12]. Darwish et al quoted the age range of thyroid cancer as 21-82 years which was similar to our study[13].The overall incidence of benign thyroid lesions in our study was 57% as compared to 43% malignancies. Multinodular goiter was the predominant benign lesion followed by lymphocytic thyroiditis accounting to 14% and 11% respectively. This is in agreement with studies in which multinodular goiter was found to be the commonest pathology of the thyroid lesions[2,14,15].

The overall incidence of malignant lesions in our study was 53% with

female predominance with proportion of 9:1. These is in concordance with Arabian series who presented 10 years experience[11,16]. Papillary cancer superseded to all other thyroid cancers amounting to 31 % followed by medullary cancer which was around 11%. We encountered a case of squamous cell cancer thyroid in our series which hasn't been reported yet in any series. The second predominant malignancy in our study was medullary thyroid cancer which is in contrast with other studies. Worldwide, 80% of thyroid malignancies are of papillary origin[11,17]. This is in consistent with the global trend. The fine needle aspiration biopsy was the diagnostic investigation of choice for estabilishing diagnosis.

80 % of our patients underwent total thyroidectomy in our study as there were more malignant lesions and multinodular goiter lesions in our study. As it is more of surgeon preference and patient's perspective to perform total thyroidectomy in malignant lesion and also the nodules were more than 3 cm in size. This also matches with studies of Srikamakshi[18] et al and various other studies.

The overall postoperative complication rate including major and minor complications in our study was 15 %. In our study there were 2 RLN paralysis out of which were 1 was on presentation itself where as other was intraoperative injury.Various studies have reported incidence of 0 -14%[2,19,20] . This is reflection of surgical expertise, nature of surgery, amount of operations performed at that center. Also we have performed 5(14%) revision surgery which also can be the reason of various complications. RLN identification at the time of surgery is the critical step to avoid injury. The course of RLN and inferior thyroid artery is variable and the complete anatomical knowledge is fundamental for the surgery. However the incidence increases in cases of malignancies as quoted by Spear et al[21].

Hypocalcaemia is also a significant issue, which increases patient's hospital stay. In this study, hypocalcaemia was noted in 11% of patients, out of which 2 patients (6%) developed permanent hypocalcaemia. This frequency is consistent with studies of Ozbas[22], Jamil[23] and Chaudhary[24] et al.

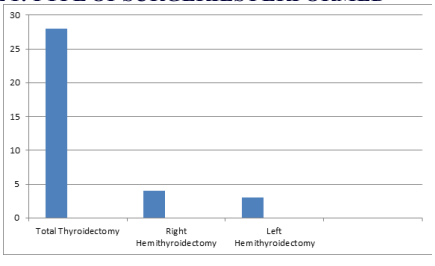
CONCLUSION:

Surgery forms the crux of treatment of thyroid diseases and should not be delayed if there is any doubt about the diagnosis. This study will outline the plans for early detection, diagnosis and management of the thyroid diseases. Multidisciplinary approach based on clinical features and investigations along with experienced surgeons and pathologists may improve diagnostic accuracy and management of patients.

TABLE 1: HISTOLOGY OF THYROID LESIONS

S.N.	HISTOLOGICAL DIAGNOSIS	NO.	%
1.	PAPILLARY CA THYROID	11	31
2.	FOLLICULAR CA	3	8
3.	MEDULLARY CA	4	11
4.	SQUAMOUS CELL CA	1	3
4.	COLLOID GOITRE	3	8
5.	NODULAR GOITRE	5	14
6.	LYMPHOCYTIC THROIDITIS	4	11
7.	NON HODKIN LYMPHOMA	1	3
8	FOLLICULAR ADENOMA	3	8

FIGURE 1: TYPE OF SURGERIES PERFORMED



REFERENCES:

1. Galofré JC, Lomvardias S, Davies TF. Evaluation and treatment of thyroid nodules: a clinical guide. Mt Sinai J Med. 2008; 75: 299-311.
2. Tariq WahatKhanzada, WaseemMeinon, Abdul Samad. An Audit of Thyroid surgery: The Hyderabad Experience. Pakistan Armed Forces Medical Journal;june 2011;
3. American Cancer Society(2007): Cancer Facts and Figures. Available: http://www.cancer.org
4. Davies L, Welch HG (2006):Increasing incidence of thyroid cancer in the United States, 1973–2002. JAMA.,10:2952164-7.
5. Schneider AB, Sarne DH (2005): Long-term risks for thyroid cancer and other neoplasms after exposure to radiation. Nat. Clin. Pract. Endocrinol. Metab., 1:82–91.
6. Ahmed J, Hashmi MA, Naveed IA, Hussain A, Amin. Spectrum of malignancy in Faisalabad. 1986–1990, Pakistan Journal of Pathology 1995 2:3:103
7. Williams ED, Doniach I, Bjarnason O et al. Thyroid cancer in iodine rich area histopathological study, Cancer 1977: 39; 215–222.
8. Lombardi CP, Raffaelli M, De Crea C, Traini E, Oraganao L, Sollazzi L et al. Complications in thyroid surgery. Minerva Chir 2007 ; 62 : 395-408.
9. Alagaratnam T. T., Ong G. B. Carcinoma of thyroid. Br. J. Surg., 1979; 66; 558–61.
10. Shield JA, Farringer JL. Thyroid cancer. Am J Surg 1977; 133; 211–5.
11. Abdulhkam Aljarbou, Anthony Morgan, Fawaz Alshaalanet al. The Patterns of Surgically Treated Thyroid Disease in Central Rural Region of Saudi Arabia. The Egyptian Journal of Hospital Medicine. 2018 :70 ; 1066-1071.
12. NazarHussain et al. Pattern of surgically treated thyroid disease in Karachi. Biomedica;Jan-june 2005;vol 21:18-20.
13. Darwish AH, Al Sindi KA, El Kafsi J (2006): Pattern of thyroid diseases-a histopathological study. Bahrain Medical Bulletin, 28: 1-6.
14. Elahi S, Manzoor-ul-Hassan A, Syed Z, Nazeer L, Nagra SA, Hyder SW. A study of goiter among female adolescents referred to centre for nuclear medicine, Lahore. Pak J Med Sci 2005; 21: 56-61.
15. Niazi S, Arshad M, Muneer M. A histopathological audit of thyroid surgical specimens. Annals King Edward Med Coll 2007; 13: 51-6.
16. Hussain F, Iqbal S, Mehmood A et al. (2013): Incidence of thyroid cancer in the Kingdom of Saudi Arabia, 2000-2010. Hematol Oncol Stem Cell Ther., 6:58-64.
17. Lai S, Mandel S, Weber R(2010): Management of thyroid neoplasms. In Cummings Otolaryngology Head & Neck Surgery. Volume 2: 5th edition. Philadelphia, PA: Mosby/Elsevier.
18. Srikamakshi, Balasubramaniam et al.Thyroid diseases and surgery: A n Audit from the ORL-HNS Department OF Stanley Medical College and Hospital. Otolaryngology online journal.2;1 19. Bron LP, O'Brien CJ. Total thyroidectomy for clinically benign disease of the thyroid gland. Br J Surg 2004; 91: 569-74.
20. Myssiorek D. Recurrent laryngeal nerve paralysis: anatomy and etiology. Otolaryngol Clin N Am 2004; 37: 25-44.
21. Spear SA, Theler J, Sorensen DM. Complications after the surgical treatment of malignant thyroid disease. Mil Med 2008; 173: 399-402.
22. Ozbas S, Kocak S, Aydintug S, Cakmak A, Demirkiran MA, Wishart GC. Comparison of subtotal, near total and total thyroidectomy in surgical management of multinodular goiter. Endocr J 2005; 52: 199-205.
23. Jamil M, Amin M. Risk factors for respiratory Complications in Thyroidectomy. J Surg Pak 2002; 7:12-6.
24. Chaudhary IA, Samiullah, Masood R, Mallhi AA. Complications of thyroid surgery: a five year experience at Fauji Foundation Hospital. Rawalpindi. Pak J Surg 2006; 22: 134-7.