Original Article

Surgical Management of Thyroid Diseases: An Experience at Sandeman (Provincial) Hospital, Quetta

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ABSTRACT

Objective: To evaluate the surgical management of thyroid disease.
Study Design: Observational / descriptive study.
Place and Duration of Study: This study was conducted at the Otorhinolaryngology and Head& Neck Surgery Department Sandeman (Provincial) Hospital, Quetta from March 2014 to May, 2016.
Materials and Methods: This study included 43 patients of thyroid disease of the afore-said period. Medical records of patients were reviewed retrospectively and results were analyzed.
Results: The mean age of the patients was 34.95±11.97 (S.D) years and male to female ratio was 1:7.6.The benign lesions were 88.63% and malignant lesions were 11.63%. Simple multi nodular goiter was 39.53% and was most common cause of thyroid enlargement. Near total thyroidectomy was performed in 34.88% and total thyroidectomy in 30.23%. Other procedures performed were lobectomy with isthmusectomy (27.91%), subtotal thyroidectomy (4.65%) and total thyroidectomy with central compartment lymph node dissection (2.33). The overall complication rate was 16.29%. Hypocalcemia was most frequent complication followed by recurrent laryngeal nerve palsy.
Conclusion: Thyroid disorders are more common in females. Simple multinodular goiter is the most frequent cause of thyroid enlargement. Near total thyroidectomy seems to be optimal procedure for benign thyroid lesions while total thyroidectomy for malignant lesions. Hypoparathyroirdism and recurrent laryngeal nerve palsy are common complications.
Key Words: Thyroid, Goiter, Solitary thyroid nodule, Multi nodular goiter, Thyroid cancer, Thyroidectomy

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INTRODUCTION

Surgery has been the treatment of choice for many disorders of the thyroid gland, both benign and malignant for many decades. Current indications for surgery are compression induced symptoms, malignancy, suspected malignancy, hyperthyroidism and cosmesis.[1-4] The conventional surgical procedures include lobectomy, hemi thyroidectomy, subtotal thyroidectomy, near total thyroidectomy, total thyroidectomy. However, the choice of surgical approach and the extent of tissue resection for the benign thyroid diseases remain controversial.[5] Recent studies have reported total thyroidectomy to be the gold standard treatment for thyroid cancer, multinodular goiter and Grave's disease. However, due to its associated risk of postoperative complications, most surgeons avoid the procedure for the treatment of benign thyroid diseases.[6, 7]

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Near total thyroidectomy has been reported to achieve both low recurrence and complication rates when compared with the rates reported in the literature for total thyroidectomy and has shown to be an effective and safe surgical treatment option for various benign thyroid diseases. However, its long term follow up has not been documented in literature.[6, 8] Thyroidectomy is associated with specific morbidities which are related to the experience of the surgeon, however.[9] The main postoperative complications of this operation are injury to the recurrent laryngeal nerve and hypocalcaemia.[10] The aim of this study was to evaluate the surgical management of thyroid diseases at Otorhinolaryngology and Head & Neck Surgery Department, Sandeman (provincial) Hospital, Quetta.

MATERIALS AND METHODS

This retrospective study was conducted at Otorhinolaryngology and Head&Neck Surgery Department Sandeman (Provincial) Hospital, Quetta from March 2014 to May 2016. Forty three patients of both genders with thyroid diseases were included in this study. Demographic data, clinical features, investigations, surgical management details and complications were noted. All findings were tabulated and results were analyzed statistically to draw inferences.

RESULTS

There were 43 patients of age 16 to 65years with a mean age of 34.95±11.97(S.D) years. Patients included 5 males and 38 females and male to female ratio was 1:7.6. Twenty eight (65.11%) patients presented with goiter and 15(34.88%) patients with solitary thyroid nodules (Figure 1).A total of 38 (88.37%) lesions were benign and 5(11.63%) were malignant. Out of 43patients 17 (39.53%) were simple multinodular goiter cases and it was the most frequent cause of thyroid enlargement. Other causes of goiter were diffuse toxic goiter in 6(13.95%) cases, simple colloid goiter in 3(6.97%) cases, toxic nodular goiter in 1(2.33%)case and papillary carcinoma in 1(2.33) case. Causes of solitary thyroid nodules were papillary adenoma 5(11.63%), follicular adenoma 5(11.63%), papillary carcinoma 2(4.65%), follicular carcinoma 1 (2.33%) and Hurthle cell carcinoma 1 (2.33%) and Hashimoto's thyroiditis 1(2.33%) as given in Table 1. Indications for thyroidectomy were cosmetic reasons in16(37.21%) patients, pressure symptoms in 4 (9.30%) cases, toxic goiter in 7 (16.28%) cases, solitary thyroid nodules in 11 (25.58%) cases and malignancy in 5 (11.63%) as shown in Table 2.

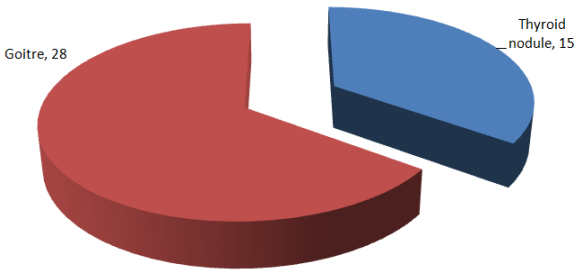

Figure No.1: Presentation of thyroid swelling

Table No.1: Histopathological diagnosis.

Sr. No.	Histopathological diagnosis	Frequency	%age
1.	Simple multinodular goiter	17	39.53%
2.	Simple colloid goiter	3	6.97%
3.	Diffuse toxic goiter	6	13.95%
4.	Toxic nodular goiter	1	2.33%
5.	Papillary adenoma	5	11.63%
6.	Follicular adenoma	5	11.63%
7.	Papillary carcinoma	3	6.97%
8.	Follicular carcinoma	1	2.33%
9.	Hurthle cell carcinoma	1	2.33%
10.	Hashimoto Thyroiditis	1	2.33%

Procedures performed were 12(27.91%) lobectomy with isthmusectomy, 2 (4.65%) subtotal thyroidectomy, 15 (34.88%) near total thyroidectomy, 13 (30.23%) total thyroidectomy and 1 (2.33%) total thyroidectomy with central compartment lymph node dissection (Table 3). Complications of thyroidectomy were seen in 7 (16.28%) cases. Permanent vocal cord palsy was observed in 2 (4.65%) cases, hypoparathyroidism in 3 (6.97%) cases, haematoma formation in 1 (2.33%) case and wound infection in 1 (2.33%) case.

Table No.2: Indications for surgery.

Sr. No.	Indications	No.of patients	%age
1.	Cosmetic reasons	16	37.21%
2.	Pressure symptoms	4	9.30%
3.	Toxic goiter	7	16.28%
4.	Solitary thyroid nodules	11	25.58%
5.	Malignancy	5	11.63%

Table No.3: Surgical procedures performed. (N=43)

Sr. No.	Operation	No. of patients	%age
1.	Lobectomy plus Isthmusectomy	12	27.91%
2.	Subtotal thyroidectomy	2	4.65%
3.	Near total thyroidectomy	15	34.88%
4.	Total thyroidectomy	13	30.23%
5.	Total thyroidectomy plus central compartment lymph node dissection	1	2.33%

DISCUSSION

Thyroid surgery offers definitive treatment for thyroid diseases with relatively low complication rates. In this study the mean age was 34.95±11.97 (S.D) years, which is comparable to that reported by Jawaid M A et al., in which observed mean age to be 35.45±15.16 (S.D) years[9], while mean age reported by KhanzadaTW et al., was 32±8.224 (S.D) years.[10]In contrast Bakheit M A et al., observed mean age to be 42 years.[11] Thyroid diseases are common in females than males. In this study the male to female ratio was 1:7.6 which is comparable to other studies.Mizrakarimov F et al, observed a male to female ratio of 1:7.8[12] while Khanzada TW et al, observed a male to female ratio of 1:9.[10] In this review 88.37% lesions were benign and 11.63% lesions were malignant. In our study simple multinodular goiter (39.53%) was the commonest cause of goiter followed by diffuse toxic goiter (13.95%) and simple colloid goiter(6.97%).This is consistent with some local studies in which multinodular goiter was found to be the commonest cause of thyroid enlargement.[9,10,13,14,15] We found solitary thyroid

nodules in 34.88% cases. Papillary and follicular adenomas were common causes of solitary thyroid nodules, which is comparable with the study of Khanzada TW et al.[10] The large majority of thyroid nodules are benign, with an overall reported risk of malignancy from 5% to 15%.[16] The overall frequency of malignancy in this study was about 11.63%. This is comparable to Khanzada's study, reporting 11% malignancy.[10]However, Jawaid MA et al., and Hussain N et al., observed14.7% and14.3% malignancy in their studies respectively.[9,17] In this study papillary carcinoma was 6.97%, follicular carcinoma was 2.33% and Hurthle cell carcinoma was 2.33%.

Thyroidectomy is a common operation with an extremely low mortality.[18] Indications for this operationinclude cosmetic problems, obstructive symptoms, hyperthyroidism, malignancy and clinical suspicion for malignancy. In this study cosmetic reasons was the most common indication for thyroidectomy. This finding is similar to studies done elsewhere.[8,19,20] In contras Acun et al, reported toxic symptoms as the most common indication for thyroidectomy.[6]All patients were managed surgically. In this study neartotalthyroidectomy (34.88%) was the commonest surgical procedure performed. Other procedures were total thyroidectomy(30.23%), lobectomy with isthmusectomy (27.91%), subtotal thyroidectomy (4.65%), and total thyroidectomy with central compartment lymph node dissection (2.33%). In study of JawaidMA, et al, the surgical procedures performed included 35.9% lobectomy with isthmusectomy, 31% subtotal thyroidectomy. 23.3% total thyroidectomy, and 9.8% near total thyroidectomy.[9] Khanzada T W, et a., reported 37.1% hemi thyroidectomy, 40.7% subtotal thyroidectomy, 7.8% neartotalthyroidectomy and 13.5% total thyroidectomy[10], while in study of Pelizzo et al, thyroid lobectomy was carried out in 20.8% and total thyroidectomy in 79.2% cases.[21]Tezelman S ,et al.,recommended total or near total thyroidectomy in benign multinodular goiter to prevent recurrence and to eliminate the necessity for early completion thyroidectomy in case of final diagnosis of thyroid carcinoma.[22] Near total thyroidectomy for toxic goiter seems to reduce the rate of recurrent hyperthyroidism compared to subtotal thyroidectomy.[23]Initial total thyroidectomy can be safely performed for both benign and malignant thyroid diseases in a less-developed region. The morbidity of a secondary surgical procedure after subtotal thyroidectomy is significantly high as compared to first-time surgery.[24] However, near total thyroidectomy causes a significantly lower rate of hypoparathyroidism compared to total thyroidectomy.[25] Complications of thyroidectomy are largely related to the magnitude of the operation and the experience of the surgeon involved.[26] The overall postoperative complication rate in this study was 16.29%. Permanent vocal cord palsy was observed in 4.65% cases, hypoparathyroidism in 6.97% cases, haematoma formation in 2.33% cases and wound infection in 2.33% cases. Chalya PL et al., observed a postoperative complication rate of 7.9%.[27]While Khanzada TW et al., observed a complication rate of 10.7% and Jawaid MA et al., observed 6.5% complication rate.[9,10]Sancho JJ et al., stated that branched inferior laryngeal nerves suffer more surgical injuries and are twice as likely to be associated with vocal cord dysfunction.[28]Incidence of hypoparathyroidism is high after thyroidectomy for cancer.[23]

CONCLUSION

Thyroid diseases are more common in females. Simple multinodular goiter is the most common cause of thyroid enlargement. Near total thyroidectomy seems to be optimal surgical procedure for benign thyroid lesions and total thyroidectomy for malignant lesions.Recurrent laryngeal nerve palsy and hypoparathyroidism are common complications of thyroidectomy.

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Hurley DL, Gharib H. Evaluation and management of multinodular goiter.Otolaryngol Clin North Am 1996;29:527-540.
2. Koh KBH,Chang KW.Carcinoma in multinodular goiter. Br J Surg 1992;79:266-267.
3. DeGroot.Treatment of multinodular goiter by surgery. J Endocrinol Invest 2001;24:820-822.
4. Cohen-kerem R,Schachter P,Sheinfield M et al. Multinodular goiter: The surgical procedure of choice. Otolaryngol Head neck Surg 2000;122: 848-850.
5. Bellantone R, Lombardi CP, Bassola M. Total thyroidectomy for management of benign thyroid disease: review of 526 cases. World J Surg 2002;26: 1468-1471.
6. Acun Z, Comert M, Cihan A et al., Near-total thyroidectomy could be the best treatment for thyroid disease in endemic regions. Archives of Surg 2004; 139:444-447.
7. Efremidou EI, Michael S, Papageorgiou MS. et al. The efficacy and safety of total thyroidectomy in the management of benign thyroid disease: a review of 932 cases. Canadian J Surg 2009;52: 39-44.
8. ElBushra AD, Mohamed IM, Awaldalla MA. Et al. Thyroidectomy at El Obeid Hospital, Western Sudan. Khartoum Med J 2009;2:158-161.
9. Jawaid MA, Rahim D,Memon MA. et al. Presentation, management and outcome of surgery PF Thyroid swellings by ENT& Head and Neck

Surgeon at Civil Hospital Karachi. JLUMS 2012;11(2):71-75.
10. Khanzada TW, Memon W, Samad A. An audit of thyroid surgery: The Hyderabad experience. PAFMJ 2011;61(2):1-5.
11. Bakheit MA, Mahadi SI, Ahmed ME .Indications and outcome of thyroid surgery in Khartoum Teaching Hospital. Khartoum Med J 2008;1(1): 34-37.
12. Mirzakarimov F, Odimba BFK, Tembo P. Pattern of surgically treated thyroid disease in Lusaka, Zambia. Med J Zambia 2012;39(4):7-11.
13. Elahi S, Manzoor-ul-Hassan A, Syed Z, et al. A study of goiter among female adolescents referred to Center for nuclear medicine, Lahore. Pak J Med Sci 2005; 21:56-61.
14. Niazi S, Arshad M, Muneer M. A histopathological audit of thyroid surgical specimens. Annals King Edward Med Coll 2007;13:51-56.
15. Imran AA, Majid S, Khan SA. Diagnosis of enlarged thyroid-an analysis of 250 cases. Ann King Edward Med Coll 2005;11(3):203-4.
16. Cooper DS, Doherty GM, Haugen BR, et al. American Thyroid Association (ATA) Guidelines Task force on Thyroid Nodules and Differentiated Thyroid Cancer; Revised American Thyroid Association management guidelines for patients with thyroid nodules and differentiated thyroid cancer, Thyroid 2009; 19:1167-214.
17. Hussain N, Anwar M, Nadia N, et al. Patterns of surgically treated thyroid diseases in Karachi. Biomedica 2005; 21:18-20.
18. Foster RS. Morbidity and mortality after thyroidectomy. Surg Gynecol Obstet 1978; 423-9.
19. Abede B, Osman M. Goiter in teaching hospital in the North Western Ethiopia. East and Central Afri J Surg 2006; 11:21-27.
20. Salman YG, Omer AE. Total thyroidectomy for bilateral benign thyroid diseases: Safety profile and therapeutic efficacy. Kuwait Med J 2007;39: 149-152.
21. Pelizzo M, Toniato A, Piotto A, et al. The surgical treatment of the nodular goiter. Ann Ital Chir 2008; 79: 13-6.
22. Tezelman S, Borucu I, Senyurek Giles Y, et al. The change in surgical practice from subtotal to near total or total thyroidectomy in the treatment of patients with benign multinodular goiter. World J Surg 2009; 33(3):400-5.
23. Chow TL, Chu W, Lim BH, et al. Outcomes and complications of thyroid surgery: retrospective study. HKM J 2001; 7(3): 261-5.
24. Hu J, Zhao N, Kong R, et al. Total thyroidectomy as primary surgical management for thyroid disease: Surgical therapy experience from 5559 thyroidectomies in less-developed region. World J Surg Oncol 2016; 14(20):1-7.
25. Erbil Y, Barbaros U,Salmaslioglu A, et al. The advantage of near-total thyroidectomy to avoid postoperative hypoparathyroidism in multinodular goiter. Langenbecks Arch Surg 2006;391(6): 567-73.
26. Harness JK, Fung L, Thompson NW, et al. Total thyroidectomy: Complications and techniques. World J Surg 1986; 10:781-6.
27. Chalya PL, Rambau P, Mabula JB, et al. Patterns and outcomes of surgical management of goiters at Bugando Medical Center in North Western Tanzania. Tanzania J Health Res 2011; 13(3):1-9.
28. Sancho JJ, Pascual-Damieta M, Pereira JA, et al. Risk factors for transient vocal cord palsy after thyroidectomy. Bri J Surg 2008; 95:961-967.