

CLINICAL PROFILE AND MANAGEMENT OF PATIENTS WITH MULTINODULAR GOITRE. (ONE YEAR MULTIDISCIPLINARY STUDY).

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ABSTRACT

Objective: To determine the clinical profile and management of patients with multinodular goiter (MNG). **Patients and Methods:** A total of fifty patients clinically presented as multinodular goiter were recruited and included in the cross sectional descriptive study conducted from January 2019 to December 2019 in a multidisciplinary manner at Liaquat University Hospital Hyderabad. Total fifty cases were selected from the in-patients admitted in the Medicine, Surgery and ENT wards with clinical presentation of multinodular goitre. The inclusion criteria of the study were the patients with enlargement of thyroid gland, with more than one nodule palpable or enlarged thyroid gland with nodular surface. Both toxic and nontoxic multinodular goitres were included in the study. All patients were investigated for thyroid profile before surgery and submitted for USG guided FNAC of the thyroid swelling and underwent surgery and all the excised thyroid specimen were sent for histopathological examination whereas the frequency / percentages (%) and means \pm SD computed for study variables. **Results:** During one year study period total fifty patients with MNG were recruited and studied had mean age \pm SD identified as 37.73 \pm 7.74 (yrs) with female gender predominance 37 (74%). Regarding residence the urban and rural population was identified as 20 (40%) and 30 (60%) while the swelling was recorded as gradual, rapid, pain and painless as 45 (90%), 05 (10%), 06 (12%) and 44 (88%). The FNAC was declared as colloidal goiter, Hashimoto's Thyroiditis and follicular neoplasm as 41 (82%), 05 (10%) and 04 (8.0%) whereas the surgical complications observed were transient hypoparathyroidism, temporary Recurrent laryngeal nerve palsy and wound infection 06 (12%), 02 (4.0%) and 03 (6.0%) respectively. **Conclusion:** MNG is the commonest thyroid disease among our population presented as swelling in front of neck with FNAC is appropriate diagnostic tool and the cosmetic purpose was identified as main indication for surgical intervention. Total thyroidectomy remains good option for MNG as recurrence of goiter can be avoided and chance of malignancy is also can be prevented.

Keywords: Multinodular, Thyroid, Goiter

How to cite this article: Abro AH¹, Shaikh MK², Shah SZA³, Baloch S⁴, Devrajani BR⁵, Karim I⁶, Raza S⁷. **CLINICAL PROFILE AND MANAGEMENT OF PATIENTS WITH MULTINODULAR GOITRE. (ONE YEAR MULTIDISCIPLINARY STUDY).** JPUMHS; 2021;11:01,93-95.

<http://doi.org/10.46536/jpumhs/2021/11.01.298>

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Received on Jan 5, 2021, Accepted On 15 March 2021, Published On 31 March 2021

INTRODUCTION

The thyroid gland is an endocrine gland located in the lower part of the front of neck and has the main function of controlling the metabolic rate, stimulating somatic and psychological development and playing an important role in calcium metabolism.^{1,2} The term thyroid is derived from Greek (Thyros – shield, eidos – form) and normal thyroid gland is not palpable while the enlargement of the thyroid gland is the most common presentation of the thyroid disease.^{3,4} The nontoxic goitre is further divided as endemic and sporadic goitre.⁵ The endemic goitre is defined as more than 10% of population shows thyroid enlargement.⁶ Diseases of thyroid gland especially multinodular goiter (MNG) due to deficiency of iodine are prevalent in Pakistan. Lesions of thyroid are predominantly confined to females in the ratio of 5:1 and this has been attributed to variations of thyroid hormone

during female reproductive function and physiological events such as puberty, pregnancy, menstruation and lactation.⁷⁻⁹ Incidence of nodular goiter accelerates with age and can be lethal but is rare entity.¹⁰ Thus, this study was conducted to determine the clinical profile and management of patients had multinodular goitre presented at tertiary care teaching hospital as timely management can save the individuals to acquire life threatening complications related to multinodular goiter.

PATIENTS AND METHODS

The cross sectional descriptive study was conducted from January 2019 to December 2019 in a multidisciplinary manner at Liaquat University Hospital Hyderabad. Total fifty cases were selected from the in-patients admitted in the Medicine, Surgery and ENT wards with clinical presentation of multinodular goitre. The inclusion criteria of the study were the patients

with thyroid gland enlargement, palpable nodule or thyroid enlargement with nodular surface and either non toxic or toxic multinodular goitres while the exclusion criteria were hyperplastic diffuse goitre, solitary thyroid nodule and patients not physically fit for surgical intervention. All patients who were clinically diagnosed as MNG since one year duration were recruited and selected. The patients were selected according to the inclusion and exclusion criteria as mentioned earlier. All the patients were studied in detail have detail clinical history, through physical examination and investigate properly and the findings were recorded on the proforma. The relevant investigations whenever indicated were performed as blood complete picture, urea, creatinine and electrolytes and urine analysis, blood sugar estimation, blood grouping and RH typing, radiograph of the neck-AP and lateral views and chest radiograph. All patients were investigated for thyroid profile before surgery and submitted for USG guided FNAC of the thyroid swelling and the specimen was sent to

laboratory for histopathological evaluation. Patients were discharged after removing the sutures and were advised to come for follow up while the medications were advised after surgery as part of management. The data will be analyzed in SPSS-20 while the frequency and percentages were calculated for categorical and descriptive variables whereas the mean \pm SD will be calculated for numerical variables.

RESULTS

During one year study period total fifty patients with MNG were recruited and studied had mean age \pm SD identified as 37.73 \pm 7.74 (yrs) with female gender predominance. The surface was nodular in majority of cases and among them largest was 16 cms / 11 cms in size and smallest was 4 cms / 2 cms in size on physical examination while the mean \pm SD for duration of disease was 9.61 \pm 2.72. The family history was identified in 04 (8.0%) of patients were whereas the demographical and clinical profile of study population is presented in Table 1.

TABLE 1: THE DEMOGRAPHICAL AND CLINICAL PROFILE OF STUDY POPULATION		
Parameter	Frequency (N=50)	Percentage (%)
AGE (yrs)		
12-19	05	10
20-29	11	22
30-39	16	32
40-49	11	22
50+	07	14
GENDER		
Male	13	26
Female	37	74
RESIDENCE		
Urban	20	40
Rural	30	60
SWELLING		
Gradual	45	90
Rapid	05	10
Painful	06	12
Painless	44	88
FNAC		
Colloid Goiter	41	82
Hashimoto's Thyroiditis	05	10
Follicular Neoplasm	04	8.0
SURGICAL COMPLICATIONS		
Transient Hypoparathyroidism	06	12
Temporary Recurrent laryngeal nerve palsy	02	4.0
Wound infection	03	6.0

DISCUSSION:

During study period total fifty patients were studied and the female population was seen to be predominant 37 (74%). Rios A, et al showed that 89% were females.¹¹ In the study conducted in Tsan CJ, et al, female to male ratio was 7:1.¹² Thus the average age incidence in our study is low compared to western literature. The main complaint in our patients was swelling in front of the neck (100%). However few patients had associated local symptoms like difficulty in swallowing and/or breathing. Pressure symptoms were seen in 26% (13 patients) as contrast to 29% in the study by Rios A, et al.¹¹

There was family history of goiter in 4 (8.0%) cases in which the patients mothers and sisters had multinodular goiter and had undergone surgery. Toxic symptoms and signs were seen in 15 patients (30%). Toxic symptoms were seen in 49% of cases in the study by Rios A, et al.¹¹ All thyroid swellings in our study were moving with deglutition. Both lobes were involved in 35 patients (70%) with predominantly involving right lobe and remaining 15 patients (30%) involving predominantly left lobe. In majority of the patients the size the gland was in stage 2 according to WHO classification i.e. swelling visible with neck in normal position. There were

3 (6%) patients of retrosternal extension of MNG, which was diagnosed by clinical examination with non visualization of the lower border of the swelling with congested look of the face. This was also examined by arm raising test which showed facial congestion with engorgement of neck veins and while on percussion, dullness was felt over the manubrium sterni. X ray film showed a retrosternal soft tissue shadow in the superior mediastinum in these patients. Radiograph of neck and chest were done in all the patients. There were two cases of tracheal shift to left side due to a goiter, mainly involving right lobe of the thyroid. The diagnosis of Follicular carcinoma preoperatively by FNAC was not possible as angioinvasion and capsular invasion, which are features of follicular malignancy, were not evident and shown that FNAC is not 100% accurate in the diagnosis of follicular carcinoma. We had 05 (10%) cases of MNG with thyroiditis and were operated for cosmetic reasons. The cosmetic purpose was identified as main indication for surgical intervention. The next common indication was for pressure effects of the goiter like dysphagia and dyspnoea and secondary thyrotoxicosis. The four individuals of follicular neoplasms were operated to rule out follicular carcinoma. Forty five patients (90%) had total thyroidectomy and remaining five (10%) patients underwent subtotal thyroidectomy. In our study postoperative complications were transient hypoparathyroidism which was observed during the first post-operative week and all recovered completely with calcium therapy. Day TA, et al shown that there was 28% of temporary hypocalcemia and 0.9% with permanent hypocalcemia.¹³ Temporary recurrent laryngeal nerve palsy was also seen which recovered within a month and similar to the study by Chang WF et al in which Unilateral vocal cord palsy occurred in 5.5% (15 patients) of which all recovered completely except 2 patient.¹⁴

Temporary RLN palsy was seen in 8% while permanent RLN palsy was seen in 0.9% in the study by Day TA, et al.¹³ There were three patients (6%) of wound infection which responded very well to broad spectrum antibiotics while there was no mortality in our study.

CONCLUSION

MNG is the commonest thyroid disease among our population presented as swelling in front of neck with. FNAC is appropriate diagnostic tool and the cosmetic purpose was identified as main indication for surgical intervention. Total thyroidectomy remains good option for MNG as recurrence of goiter can be avoided and chance of malignancy is also can be prevented.

ETHICS APPROVAL: The ERC gave ethical review approval **CONSENT TO PARTICIPATE:** written and verbal consent was taken from subjects and next of kin. **FUNDING:** nil

ACKNOWLEDGEMENTS: We would like to thank the all contributors and staff and other persons for providing useful information. **AUTHORS'**

CONTRIBUTIONS: All authors read and approved the final manuscript. **CONFLICT OF INTEREST:** No

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