

## MULTI NODULAR GOITER; FREQUENCY OF MALIGNANCY AND ITS HISTOPATHOLOGICAL TYPES. A TERTIARY CARE HOSPITAL EXPERIENCE

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**ABSTRACT... Objective:** I. To determine the frequency of malignancy in multi nodular goiter. II. To determine the histopathological types. **Design:** This is a prospective study. **Setting:** Surgical department of Foundation Hospital Rawalpindi and associated Teaching Hospital of Frontier Medical College Abbottabad. **Period:** Aug. 2002 to Aug. 2007. **Patients and Methods.** One hundred patients with Multi nodular were included in this study. Patient with diffuse goiter, solitary nodules, patient operated somewhere else and suspected cases of malignancy were excluded from the study. Tissue were sent to Armed Force Institute for histopathological examination. Patients were followed for 2 weeks after surgery with histopathological report, all the preoperative and postoperative findings were recorded in detail. Data was analyzed by using SPSS 14. **Results.** Majority of patients studied, belonged to Azad Kashmir and Gilgit which are among the known endemic regions for goitre in Pakistan and other from Chakwal and Jhelum. Histopathology revealed 96 (96%) patients with multi nodular goiter, 3 (3%) papillary carcinoma and 1 (1 %) Follicular carcinoma. **Conclusions:** Multinodularity of the goitre should not be considered as low risk of malignancy and delay for surgical intervention. Changes in the size of gland, the appearance of new and hard nodules or cervical lymphadenopathy may indicate malignant change and prompt indication for surgery.

**Key words:** Goiter, multinodular, papillary carcinoma

### INTRODUCTION

Thyroid gland is one of the most common endocrine gland to be effected by various disease processes. It is the largest gland in endocrine family. Thyroid was classified as ductless gland by Albert Von Haller in 1776<sup>1</sup>.

Goitre meaning throat (French) and English scientists described goitre in 1625. Abdul Qasim Zoharvi described goitre in 1625<sup>2</sup>. Thyroid cancer was first described in

1811 by Burn. Interest in the etiology and prevalence of thyroid cancer arise in 1940 when high incidence of thyroid cancer was found in post thyroidectomy patients<sup>3</sup>.

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In 1909 Kocher received the Nobel Prize for medicine in recognition of his work on the physiology, pathology, and surgery of the thyroid gland<sup>4</sup>.

The term goitre is non specific and describes any swelling of thyroid gland. Goitres become visible when they are three times the normal size. So that they weigh over 50g. Goitres can be graded according to WHO grading scheme<sup>6</sup>.

- Grade 0: Non palpable or nonvisible goitre
- Grade 1: Palpable goitre
- Grade 1A: Goitre detectable only by palpation
- Grade 1B: Goitre palpable and visible with neck extended
- Grade 2: Goitre visible with the neck in normal position
- Grade 3: Large goitre visible from a distance
- Giant goitre is defined as a goitre protruding beyond chin or jaw. The giant goiter is exclusively confined to regions of endemic goiter<sup>7</sup>.

## MATERIAL AND METHODS

This prospective study was carried out in surgical department of Fauji Foundation Hospital Rawalpindi and associated Teaching Hospital of Frontier Medical College Abbottabad from Aug. 2002 to Aug. 2007. One hundred patients with multinodular goiter were included in this study. Patient with diffuse goiter, solitary nodules, patient operated elsewhere and patients with suspicion of malignancy were excluded from the study.

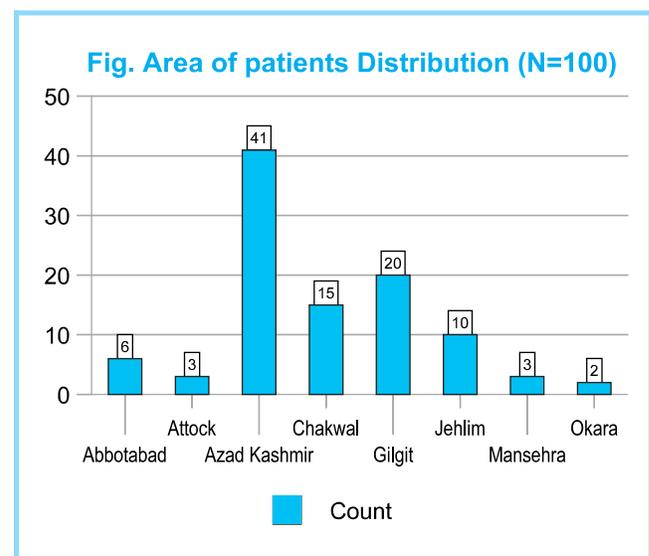
Patients included in this study were investigated for blood complete examination, urea, creatinine, blood sugar, serum calcium, ECG, X-Ray Chest, X-ray Cervical Spine (anterioposterior and lateral view), indirect laryngoscopy, thyroid function tests and thyroid scan. Tissues were sent to Armed Forces Institute for histopathological examination. Patients were reviewed 2 weeks after

surgery with histopathological report. All the preoperative and postoperative findings were recorded in detail. Data was analyzed by the using SPSS 14 and results were analyzed and compared.

## RESULTS

There were 95 women (95 %), 5 Men (5 %) with male to female ratio of 1:19 and mean age of 42.39 years. Majority of patients were from Northern Areas of Pakistan where disease is endemic and others from Chakwal and Jhelum. 12(12%) presented with pressure symptoms, 88 patients with neck swelling and cosmetic concern. 92 % were euthyroid and only 8 % were toxic. None of our patient was hypothyroid. Histopathology revealed 96 patients with multi nodular goiter, 3 (3%) papillary carcinoma and 1 (1 %) follicular carcinoma.

	Frequency	%age
Multi nodular goitre	96	96
Papillary carcinoma	3	3
Follicular carcinoma	1	1
Total	100	100



## DISCUSSION

In this study, none of the patients was subjected to FNAC and it was procedure dependent. Enough tissue was available for histological diagnosis. Most of the patients (92%) in the present study were euthyroid. The present study showed female predominance. It is widely known fact that thyroid disorders are more common in the females<sup>8</sup>. Other reason of the females higher incidence is earlier presentation, as they are more conscious of the unsighted and ugly lumps in front of their necks. Cosmetic problem is the most common reason for consultation. The frequency of malignancy in MNG was 4% that correspond to the study done by Moosa FA et al<sup>9</sup>. According to them frequency of malignancy was 3% in MNG. According to Koh KB et al the incidence of occult malignancy in multinodular goiter varies from 4 to 17 percent<sup>10</sup>.

There were three cases of papillary carcinoma and one case of follicular carcinoma.

In present study, papillary carcinoma was the most frequent histological type of thyroid tumours. It comprised of 75% of thyroid cancers. In accordance with published work, the histopathological type of carcinoma more frequently associated to MNG was shown to be the papillary (62.5%)<sup>11</sup>. This frequency of thyroid cancer is also in accordance with a study by Khan et al from Rawalpindi where papillary carcinoma constituted 60% of malignant thyroid tumours<sup>12</sup>. From Saudi Arabia, Ahmed et al reported that 80% of thyroid tumours belonged to category papillary carcinoma<sup>13</sup>. In USA, Papillary carcinoma comprised 90% of thyroid cancer.

In our study follicular carcinoma comprised 25% of thyroid cancers. Average age of patients with follicular carcinoma was 63 years; a similar frequency of follicular carcinoma has been reported by Khan et al which is main referral area for Northern Areas of Pakistan<sup>12</sup>. Similar study was conducted by Jamal A which included 222 patients over a period of three years<sup>14</sup>. None of the patients was diagnosed as a case of a malignancy preoperatively in his study but on histopathology, the frequency of malignancy in MNG was 6.3% that included

papillary carcinoma 10(71.7%), follicular carcinoma 2(14.5%), medullary carcinoma 1(7.2%) and lymphoma 1(7.2%). Study done by Pier Paolo Gandolfi and his colleagues showed that there were 5 cases of papillary cancer, 2 cases of Hurthle cell carcinoma and 1 case of follicular cancer on histopathological examination, and the incidence of occult carcinoma in MNG was 8.6%<sup>15</sup>. In another study by Khatri YM and Khan A the figures reported were 6.05%<sup>4</sup>.

In a local study by Qureshi N et al. conducted in 1996, frequency of carcinoma in MNG was 8.6%<sup>16</sup>.

## CONCLUSIONS

1. Patients with multinodular goiter, if treated conservatively should be closely followed up.
2. Multinodularity of the goitre should not be considered as low risk of malignancy and delay for surgical intervention.
3. The patients with thyroid swelling should undergo surgical exploration and excision biopsy.
4. Changes in the size of gland, the appearance of new and hard nodules or cervical lymphadenopathy may indicate malignant change and immediate surgery for intervention.

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**Too many people go  
through life waiting for  
things to happen  
instead of making  
them happen!**

Sasha Azevedo