

# INCIDENCE OF THYROID MALIGNANCY IN MULTINODULAR GOITER

Inayat Ullah, Muhammad Hafeez, Naseer Ahmad, Ghulam Muahammad, Sanum Gandapur

Department of ENT, Khyber Teaching Hospital, Peshawar - Pakistan

## ABSTRACT

**Objective:** To evaluate the incidence of thyroid malignancy in multinodular goitre.

**Material and Methods:** This descriptive study was carried out in the department of ENT and Head and Neck surgery Khyber Teaching Hospital, Peshawar, from January 2011 to December 2012. All the patients with multi nodular goiter were evaluated with ultrasound, fine needle aspiration cytology and thyroid function tests, and they were offered surgery as the treatment for suspicions of malignancy, cosmesis and compression symptom. The specimen were subjected to histopathological examination to determine the incidence and types of malignancy in multinodular goitre (MNG).

**Results:** A total of 100 cases were included in this study, among those 75(75%) were females and 25(25%) were male, Out of 100 patients 85% were benign and 15% were malignant among the malignant tumors, 10(10%) were papillary, 4(4%) were follicular, 1(1%) was medullary carcinoma.

**Conclusion:** The incidence of malignancy in MNG is quite significant and it is not very low as was thought before.

**Key Words:** Thyroid, malignancy, multinodular, Goitre.

## INTRODUCTION

Thyroid malignancy is a relatively rare tumour, but it represents the most frequent form of endocrine malignancy. It represents 01% of human neoplasias and its annual incidence is estimated worldwide from 0.5 to 10:100,000 in world population.<sup>1</sup> Thyroid nodule have been reported to be found in 4% to 7% of the population and in 20% to 50% of population by ultrasonography<sup>2,3,4</sup>. Multinodular Goiter (MNG) had been traditionally thought to be at low risk malignancy as compared to a solitary nodule however various studies have reported a 7 to 17% incidence of malignancy in MNG<sup>5,6,7</sup>. The most common variety of malignancy which has been documented in the literature is papillary carcinoma, followed by follicular carcinoma and follicular variety of papillary carcinoma.<sup>8,9,10</sup> Cases having high risk of malignancy can usually be identified on clinical assessment and use of nuclear imaging modality. The exposure to ionizing radiation and the availability of more sensitive diagnostic tests may be possible explanation for a worldwide increase in the incidence of the thyroid cancer.<sup>11</sup>

The objective of this study was to determine the incidence and types of various thyroid malignancies in multinodular goitre by doing histopathology of thyroid specimen.

## MATERIAL AND METHODS

This descriptive study was carried out in the Department of ENT and Head and Neck Surgery,

### Address for Correspondence:

**Dr. Inayat Ullah**

Assistant Professor

Department of ENT, Khyber Teaching Hospital,

Peshawar - Pakistan

Cell. +92-333-9115307

Email: iukent@yahoo.com

Khyber Teaching Hospital, Peshawar, from June 2011 to December 2012. All the patients with MNG goiter were examined by clinical, serologically and biochemically, with no history of irradiation to neck or a family history of thyroid malignancy were included in the study. Patients with recurrent goiter proven thyroid malignancy and metastatic cervical lymph adenopathy with occult primary were excluded from study.

All the selected patients underwent ultrasonography and fine needle aspiration cytology in cases with a suspicious nodule rapidly growing hard, irregular nodule which was detected on clinical examination and on ultrasound.

All the patients were offered surgery as treatment based on diagnostic work up equivocal from various investigation. After the surgery all the thyroid specimens were sent for histopathology evaluation. All pre operative and post operative findings were recorded in detail in a standard format and results were evaluated.

## RESULTS

The total number of patients included in the study was one hundred. The female predominated the male in the ratio of 7.5:2.5, as shown in Table 1. The most common presenting symptom was swelling in front of neck, which moved with swallowing. In 85(85%) patients the swelling which was of thyroid origin was benign, while in 15 (15%) patient it was malignant. The type of malignancy on histopathology reports are shown in Table 2. Out of all malignant tumors the papillary carcinoma was on the top with a percentage of 10%.

## DISCUSSION

Multi nodular goiter (MNG) is defined as the palpation of multiple discrete nodules in the enlarged thyroid gland. Etiology and pathogenesis of MNG is

**Table 1: Genderwise Distribution**

Gender	No. of patients & %ages
Male	25 (25%)
Female	75 (75%)

**Table 2: Histopathological Distribution**

Type of Malignancy	No. of patients & %ages
Papillary	10 (66.6%)
Follicular	4 (25.6%)
Medullary	1 (6.66%)

not very clear. A mild dietary deficiency of iodine, slight impairment of hormones synthesis, increased iodide clearance from the kidney and presence of thyroid stimulating immunoglobulins have been suggested as the various causes<sup>12</sup>.

Traditionally patients with MNG have been considered less at risk of malignancy than those with single nodule. However, published report show that the incidence of malignancy in patients with single nodule dose not differ from those with MNG<sup>13</sup>.

MNG is a risk factor for epidemiologically ascertained thyroid malignancy<sup>14</sup> Epidemiologically studies have demonstrated the incidence of malignancy in patient with MNG was higher than the incidence of general population<sup>14</sup>. A study which was conducted by Benzarti et al in Tunis found a 9.5% incidence of malignancy in MNG<sup>15</sup> whereas Alagic et al reported an 8% incidence of malignancy in MNG in his study<sup>16</sup>. Prades et al from France however reported quite a high incidence ie 12.2%<sup>17</sup>.

The incidence of malignancy in MNG in our study was 15% our findings are comparable with those of Baloch MN and colleague who found malignancy 14% of cases<sup>18</sup>. A rather lower prevalence rate of 11% was reported by Memon W et al<sup>19</sup>. In a recent study conducted at JPMC in Karachi, the frequency of thyroid malignancy was found to be 15.33%<sup>20</sup>. In a similar study at JMPC Karachi, the author found malignancy in 14.35%<sup>21</sup>.

There appears to be general agreement in all these studies that papillary carcinoma is the predominant malignancy in MNG goiter. In this study, papillary carcinoma was the most common thyroid malignancy. This is consistent with figure from various national and international studies<sup>21</sup>.

## CONCLUSION

The risk of malignancy in multinodular goitre is not as low as it was thought before and that it is quite significant and is mostly of the papillary type.

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