

# Thyroid Nodules in Baghdad, Iraq: A Personal Experience

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**Abstract:** *Background: Iraq is an endemic of goiter. The prevalence of thyroid nodule increases with age. Recent published reports showed changes in thyroid pathology in developing countries. This work was carried out to throw a light on thyroid nodules in a private practice in Baghdad, Iraq.* **Methods:** a total of 79 patients with thyroid nodules was included in the study. They were recruited from attendants to a private surgical clinic in Baghdad during 2007 through 2009. They were evaluated clinically and investigated. After surgery specimens were evaluated histopathological. **Results:** Out of the total, there were 64.6% with multinodular goiter, 22% were with diffuse goiter and 12.6% were solitary nodules. Thyrotoxicosis was noticed in 21.5%. Thyroid malignancy was diagnosed in 6.3% with a female predominance (80%). Papillary carcinoma was among 80% of patients with malignancy. Hashimoto's thyroiditis was observed in 6.3%, all of them were females. **Conclusion:** The study showed changes in thyroid pathology and trends of surgery.

**Keywords:** thyroid nodule, Iraq, MNG, Hashimoto's thyroiditis

## 1. Introduction

Iraq is an endemic goiter area<sup>1</sup>. Thyroid nodules are a common medical problem<sup>2</sup>. Population studies suggest that 3-8% of adults have asymptomatic thyroid nodules<sup>3</sup>. The prevalence of such nodules increases with age. Thyroid nodules are four times more common in women than men<sup>4,5</sup>. Reports on changes in the thyroid pathology in developing countries were published<sup>6</sup>.

This work was carried out to throw a light on thyroid nodules in a private practice in Baghdad, Iraq.

## 2. Materials and Methods

A total of 79 patients with thyroid nodules was included in this study. They were recruited from attendants to a private surgical clinic in Baghdad, during 2007 through 2009. They were evaluated clinically and investigated by ultrasound, haematogram, chest X ray, renal function and thyroid function tests. Fine needle aspiration cytology (FNAC) was done also.

All patients were subjected to surgery (subtotal and total thyroidectomy) and specimens were evaluated histopathological.

## 3. Results

A total of 79 patients was included in the study. Their age ranged 21 – 74 years ( $38.2 \pm 12.3$ ), with female to male ratio of 3.4:1. Clinically multinodular goiter was noticed in 51 (64.6%) patients, diffuse goiter was in 18 (22.8%) and solitary nodule was in 10 (12.6%). Thyrotoxicosis was present in 17 (21.5%). Most of patients with thyrotoxicosis were > 40 years old.

Thyroid malignancy was diagnosed in 5 (6.3%) patients. Out of them 4 (80%) patients were females. Papillary carcinoma was in 4 (80%) patients.

Hashimoto's thyroiditis was observed in 5 (6.3%) female patients, and Grave's disease was in 2 (2.5%) female patients.(Table 1).

## 4. Discussion

In the line of previous reports<sup>2,4,7</sup>, the study showed a female predominance. High observed rate of multiple nodular goiter (MNG) is consistent with that previously reported high figure in Baghdad<sup>8</sup>. Different figures reported in Europe and Africa<sup>9,10</sup>. The variations might be explained by different levels of iodine in diet. Similar to that reported in Baghdad<sup>8</sup>, toxic goiter was 10.1%. The study revealed that rate of malignancy was 6.3%. It is lower than that reported in other Iraqi studies; in Al-Sulaimania (8.6%)<sup>11</sup>, Baghdad(8.5%)<sup>8</sup>. However, higher figures were reported in Iraq: Baghdad (15.3%)<sup>4</sup>, and in Kerballa(18%)<sup>12</sup>. These differences might be attributed to the differences in samples and methods of selection. In this study, the sample was a convenient one i.e. from a private clinic, which might be drawn from a localized area in Baghdad. Other studies recruited their samples from attendants to general teaching hospitals. Being retrospective studies might affect the quality of data i.e. missing data or patients. Lower figures were reported from very large samples e.g. Italy (4.6%)<sup>14</sup> and Taiwan (3.9%)<sup>15</sup> which might be suggested that there was no missing many malignant nodules. The small sample size in this study might be contributed to the relative high figure of malignancy. Thyroid cancer incidence has been increased all over the world<sup>16</sup>. Recently, in Sri Lanka (developing country), it was postulated that the iodination program is likely to be responsible for this increase<sup>6</sup>. A recent report from Iraq showed that thyroid cancer in 2000-2005 was 5 folds of that 1990-2000<sup>8</sup>.

Papillary thyroid carcinoma (PTC) constituted 80% of thyroid malignancy. It is similar to the high figures reported in Baghdad (87.5%)<sup>8</sup> previously. In Kerballa it was 50%<sup>12</sup>. PTC has been doubled in the world especially the West.

The finding that HT rate was 6.3% is similar to that of other workers (6.5%<sup>17</sup> and 6.6%<sup>18</sup>). The rate of Grave's disease was 2.5%. It may occur in genetically susceptible individual in the same family. The HLA alleles associated with the disease in Iraqi Arab Muslims patients were A19, B35 and B40<sup>19</sup>. The data on the incidence of thyroid autonomy (HT

and Grave's disease) after mass iodination are scarce. Some reports indicate short term increase<sup>20,21</sup>, others observed decrease in the first year after iodination<sup>22,23</sup>. In Iraq, iodination was practiced during 1990s years i.e. during sanctions, with no reference about the dose of iodization<sup>24,25</sup>. Literature shows that autoimmune thyroid disorders are an important cause of goiter in post-iodination phase<sup>26</sup>. Iodination in Iraq might affect the prevalence of HT, however, no epidemiological study tackled this situation. In this study, HT and Grave's disease were only in females. It is in agreement with previous reports<sup>17,18,26</sup>.

Total thyroidectomy constituted 12.6% on surgery. During the last decade there was a noticed change in the behavior of surgery toward radical surgery as near total thyroidectomy and total thyroidectomy<sup>8,27</sup>. It was found that total thyroidectomy and near total thyroidectomy are safe and effective approach in thyroid pathology<sup>27</sup>. In conclusion, this work documented changing pattern in thyroid pathology and trend of surgery.

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**Table 1: Characteristics of the studied sample**

| Variable                | Mean ± SD (range)     |       |
|-------------------------|-----------------------|-------|
| Age                     | 38.2 ± 12.3 (21 – 74) | %     |
| <b>Pathology</b>        |                       |       |
| MNG                     | 43                    | 54.4  |
| Toxic MNG               | 8                     | 10.1  |
| Benign adenoma          | 6                     | 7.6   |
| Hashimoto's thyroiditis | 5                     | 6.3   |
| Follicular adenoma      | 5                     | 6.3   |
| Undifferentiated ca     | 1                     | 1.3   |
| Benign cyst             | 5                     | 6.3   |
| Papillary carcinoma     | 4                     | 5.1   |
| Grave's disease         | 2                     | 2.5   |
| Total                   | 79                    | 100.0 |
| <b>Malignancy</b>       |                       |       |
| Undifferentiated ca     | 1                     | 20.0  |
| Papillary carcinoma     | 4                     | 80.0  |
|                         | 5                     | 100.0 |