Histopathological Pattern of Diagnoses in Patients Undergoing Thyroid Operations

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ABSTRACT
Objective: To determine the pattern of histopathological diagnoses in patients undergoing thyroid operations.

Material and Method: This descriptive study was carried out at Isra University Hospital, Hyderabad over a period of 3 years from May 2005 to April 2008. Patients having goiters and undergoing different types of thyroid surgeries for different indications were included in this study. Fine needle aspiration cytology (FNAC) was performed in patients with thyroid nodule or dominant nodule and was compared with postoperative histopathology. Those patients who underwent only FNAC but were not operated were excluded from the study.

Results: Out of 140 thyroid surgical specimens, 125 (89%) were diagnosed to be having non-neoplastic lesions and were more common in females. Adenomatous goiter was the most common variety of benign lesions accounting for 60% of all thyroid nodules. Papillary carcinoma was the commonest thyroid malignancy and was observed in 60% of all thyroid malignancies seen.

Conclusion: Benign thyroid lesions were more common than malignant ones. Adenomatous goiter was the commonest benign lesion of the thyroid gland while papillary carcinoma was the most common malignant tumor of thyroid gland. (Rawal Med J 2009;34:14-16).

Key words: Colloid goiter, follicular adenoma, thyroid carcinoma, papillary carcinoma.
INTRODUCTION

Thyroid disorders are one of the common problems encountered in clinical practice with majority of them benign in nature. They are endemic in mountainous regions of the world where the soil, water, and food supply contain little iodine. In Pakistan, an alarmingly high prevalence of iodine deficiency goiter has been reported from the northern areas of the country in the lap of Himalayas. Long-standing goiter (more than 5 years) is regarded as one of the strongest risk factors for the development of thyroid cancer. Thyroid cancer is a relatively rare malignancy representing only 1.5% of all cancer but it is the commonest endocrine cancer accounting for 92% of all endocrine malignancies. Papillary carcinoma is the most common thyroid cancer followed by follicular, medullary, anaplastic and lymphoma. The objective of this study was to determine the spectrum of histopathological diagnoses encountered in patients undergoing thyroid operations.

MATERIALS AND METHODS

This descriptive study was carried out at Isra University Hospital, Hyderabad and in another private hospital of Hyderabad over a period of 3 years from May 2005 to April 2008. All patients presenting with thyroid swelling and undergoing any type of thyroid operation were included in the study. Those patients in whom fine needle aspiration cytology (FNAC) was done but they did not undergo thyroid surgery were excluded from the study.

FNAC was carried out in patients having dominant or solitary nodule. All patients had a preoperative indirect laryngoscopy to exclude pre-existing vocal cord pathology. Near total thyroidectomy was the commonest surgical procedure in cases of multinodular goiters and lobectomy was done in patients having solitary nodule. Detailed information including name, age, gender, clinical status (hypothyroid/ hyperthyroid/ euthyroid), any previous history of thyroid
surgery, relevant investigations like FNAC, thyroid scan, ultrasound reports and operative findings were provided to histopathologist.

RESULTS

A total of 140 patients fulfilled the selection criteria. The gender distribution was predominantly females (n=126), making up to 90% of total population with female to male ratio was 9:1. The mean age was 32 years (range 16-68 years).

Table 1. Histopathological types of thyroid lesions (n=140).

<table>
<thead>
<tr>
<th>S. No</th>
<th>Histopathological diagnosis</th>
<th>Number</th>
<th>%</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Adenomatous goiter</td>
<td>84</td>
<td>60</td>
</tr>
<tr>
<td>2</td>
<td>Follicular adenoma</td>
<td>38</td>
<td>27.1</td>
</tr>
<tr>
<td>3</td>
<td>Papillary carcinoma</td>
<td>11</td>
<td>7.85</td>
</tr>
<tr>
<td>4</td>
<td>Follicular carcinoma</td>
<td>03</td>
<td>2.1</td>
</tr>
<tr>
<td>5</td>
<td>Lymphocytic thyroiditis</td>
<td>03</td>
<td>2.1</td>
</tr>
<tr>
<td>6</td>
<td>Anaplastic carcinoma</td>
<td>01</td>
<td>0.71</td>
</tr>
</tbody>
</table>

Out of 140 specimens, 125 (89%) were benign and 15 (11%) were malignant. Among 125 benign lesions, the commonest pathological lesion encountered was adenomatous goiter accounting for 68% of all benign and 60% of all thyroid lesions. Other less common benign lesions were follicular adenoma and lymphocytic thyroiditis observed in 38 (27.1%) and 3 (2%) patients respectively (table 1).

Table 2. Histopathological types of thyroid cancers (n=15).

<table>
<thead>
<tr>
<th>S. No</th>
<th>Histopathological diagnosis</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Papillary carcinoma</td>
<td>11</td>
<td>73.3</td>
</tr>
<tr>
<td>2</td>
<td>Follicular carcinoma</td>
<td>03</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>Anaplastic carcinoma</td>
<td>01</td>
<td>6.7</td>
</tr>
</tbody>
</table>
Among 140 patients, 15 patients (11%) had thyroid malignancy and papillary carcinoma was found to be the commonest malignant thyroid lesion, observed in (11/15) 73.3% of all thyroid malignant lesions. This was followed by follicular carcinoma seen in (3/15) 20% of all malignant lesions, while anaplastic carcinoma was seen in one patient (table 2).

DISCUSSION

Thyroid enlargement in the form of solitary, multinodular or diffuse goiter is inexplicably frequent surgical problem and affect approximately one-third of adult world population.5 Today thyroidectomy is a routine procedure because of the introduction of safe anesthesia, antiseptics, fine surgical instruments and developments of new techniques, offering the chances of cure to many patients.6 The overall incidence of non neoplastic lesions in this study was 89% as compared to 11% of neoplastic lesions. These results are supported with some local studies7-9 as well as studies from Yemen10 and East Africa11 whereas some other local studies reported a significantly high incidence of thyroid malignancies, observed in about 26% to 36.6% of patients respectively.12-14

The commonest non-neoplastic lesion in this study was adenomatous goiter including diffuse and multinodular goiters which constituted 60% of the thyroid specimens. This is consistent with some local studies in which multinodular goiter and diffuse adenomatous goiters were found to be the commonest pathologies of the thyroid lesions.2,4,15-17 Follicular adenomas were seen in 27.1% of the specimens and it was the 2nd most common benign thyroid lesion. This finding is consistent with the observation of Suster18 and Bouq6 but in contrast Virk et al showing follicular adenoma to be more common than colloid goiter (65%Vs30%).19 Patients with clinically discrete solitary nodules in whom FNAC showing “follicular lesion” should always undergo total lobectomy to exclude the diagnosis of follicular carcinoma on final histopathology report.
Variety of inflammatory conditions affect the thyroid gland, these may be focal or diffuse and often associated with thyroid dysfunction. In this study, 2% patients had thyroiditis, all of which were of lymphocytic type as seen in some national studies. Variation in the frequencies of thyroid carcinomas has been observed in various parts of the world. The overall incidence of malignancy in this study was about 11%, as reported in various international studies. In this study, papillary carcinoma was the most common malignant thyroid lesion observed in about 70% (11/15) of the lesions. Although this observation is consistent with several other studies, in reports from Nigeria, follicular carcinoma was the commonest thyroid cancer. In conclusion, benign thyroid lesions were more common than malignant lesions. Adenomatous goiter was the commonest lesion observed in thyroid specimens. Papillary carcinoma was the commonest thyroid cancer followed by follicular carcinoma.

REFERENCES


