Clinicopathological study of goiter among women in a tertiary government hospital

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Abstract

Introduction: Diseases of the thyroid gland are one of the commonest endocrine disorders in India as well as in the world. It is estimated that nearly 42 million people in India suffer from thyroid diseases. They may be diffuse or nodular, benign or malignant, euthyroid or hyperthyroid in status. The spectrum of thyroid diseases includes simple goitre, thyroiditis, adenoma, carcinoma, multinodular goiter, hypo or hyperthyroidism and Graves' disease. It is postulated that the incidence of thyroid nodule increases with age, in women, in people with iodine deficiency, and after radiation exposure. Materials & Methods: Study done in Government General Hospital Ananthapuramu. Cross sectional descriptive study. Study subjects were included based on inclusion criteria who have given consent for the study. Results: A total of 35 women were enrolled for this study. Mean age of the study subjects is 36.51 years. A report suggests a prevalence of 2-6% with palpation, 19-35% with ultrasound, and 8-65% in autopsy data while a prevalence of 4-7% has been estimated in another. Conclusion: The prevalence of goitre is different according to the geographical region, age and sex. Majority of the study subjects had Swelling of neck. Among Biopsy reports majority were diagnosed as Multy nodular goiter. We recommend further detailed study in this area to explore further details for the benefit of general population.

Key words: Hypothyroidism, simple goitre, Thyroid, Goitre
Selection was done by convenient sampling and inclusion and exclusion criteria are as follows.

**Inclusion criteria:** Willing, women diagnosed with goiter.

**Exclusion criteria:** Unwilling, severe thyroid disorders.

**Data analysis:** Data was analyzed by SPSS 20.0. Data was expressed in frequency and percentage.

**Results**

Results are presented in table no 1 to table no 4. Table no 1 presents Descriptive data on age of study subjects. Table no 4 presents Table 2: Chief complaints among study subjects. Table 4 presents Biopsy and age group.

**Table 1: Descriptive data on age of study subjects**

|                          |       |
|--------------------------|-------|
| **Mean**                 | 36.51 |
| **Std. Error of Mean**   | 2.403 |
| **Median**               | 32.00 |
| **Mode**                 | 20    |
| **Std. Deviation**       | 14.218|
| **Variance**             | 202.139|
| **Range**                | 45    |
| **Minimum**              | 20    |
| **Maximum**              | 65    |
| **Sum**                  | 1278  |

Mean age of the participants is 36.51

**Table 2: Chief complaints among study subjects**

| Complaints               | Age group | Total |
|--------------------------|-----------|-------|
|                          | 20-40 | 20-40 | 20-40 | Total |
| Swelling neck            | Count  | 18    | 10    | 2     | 30    |
|                         | % of Total | 51.4% | 25.7% | 5.7%  | 82.9% |
| Difficulty to swallow    | Count  | 4     | 1     | 0     | 5     |
|                          | % of Total | 11.4% | 2.9%  | 0.0%  | 14.3% |
| Count                    | Count  | 22    | 11    | 2     | 35    |
| % of Total               |        | 62.9% | 31.4% | 5.7%  | 100.0%|
### Table 3: Relation of FNAC and age group

| FNAC                                      | Age group |          |          |          |          |
|-------------------------------------------|-----------|----------|----------|----------|----------|
|                                           | 20-40     | 40-60    | >60      | Total    |
| Adenomatous goiter                        |           |          |          |          |          |
| Count                                     | 0         | 1        | 0        | 1        |
| % of Total                                | 0.0%      | 2.9%     | 0.0%     | 2.9%     |
| Adenomatous goiter microcystic degeneration |           |          |          |          |          |
| Count                                     | 0         | 1        | 0        | 1        |
| % of Total                                | 0.0%      | 2.9%     | 0.0%     | 2.9%     |
| Colloid goiter                            |           |          |          |          |          |
| Count                                     | 7         | 5        | 1        | 13       |
| % of Total                                | 20.0%     | 14.3%    | 2.9%     | 37.1%    |
| Nodular colloid goiter                    |           |          |          |          |          |
| Count                                     | 3         | 2        | 1        | 6        |
| % of Total                                | 8.6%      | 5.7%     | 2.9%     | 17.1%    |
| Nodular colloid goiter with cystic degeneration |           |          |          |          |          |
| Count                                     | 2         | 0        | 0        | 2        |
| % of Total                                | 5.7%      | .0%      | .0%      | 5.7%     |
| Nodular colloid goiter with hemorrhage with cystic degeneration |           |          |          |          |          |
| Count                                     | 1         | 0        | 0        | 1        |
| % of Total                                | 2.9%      | .0%      | .0%      | 2.9%     |
| Nodular goiter                            |           |          |          |          |          |
| Count                                     | 3         | 1        | 0        | 4        |
| % of Total                                | 8.6%      | 2.9%     | .0%      | 11.4%    |
| Nodular goiter with cystic degeneration    |           |          |          |          |          |
| Count                                     | 1         | 0        | 0        | 1        |
| % of Total                                | 2.9%      | .0%      | .0%      | 2.9%     |
| Follicular adenoma                        |           |          |          |          |          |
| Count                                     | 5         | 1        | 0        | 6        |
| % of Total                                | 14.3%     | 2.9%     | .0%      | 17.1%    |
| Count                                     | 22        | 11       | 2        | 35       |

### Table 4: Biopsy and age group

| Biopsy                                      | Age group |          |          |          |          |
|----------------------------------------------|-----------|----------|----------|----------|----------|
|                                             | 20-40     | 20-40    | 20-40    | Total    |
| Adenoma thyroid                             |           |          |          |          |          |
| Count                                       | 1         | 0        | 0        | 1        |
| % of Total                                  | 2.9%      | .0%      | .0%      | 2.9%     |
| Adenomatous goiter                          |           |          |          |          |          |
| Count                                       | 3         | 2        | 0        | 5        |
| % of Total                                  | 8.6%      | 5.7%     | .0%      | 14.3%    |
| Colloid goiter                              |           |          |          |          |          |
| Count                                       | 0         | 1        | 2        | 3        |
| % of Total                                  | .0%       | 2.9%     | 5.7%     | 8.6%     |
| Colloid goiter with cystic changes          |           |          |          |          |          |
| Count                                       | 1         | 0        | 0        | 1        |
| % of Total                                  | 2.9%      | .0%      | .0%      | 2.9%     |
| Hashimotos thyroiditis                      |           |          |          |          |          |
| Count                                       | 1         | 1        | 0        | 2        |
| % of Total                                  | 2.9%      | 2.9%     | .0%      | 5.7%     |
| Micro follicular adenoma                    |           |          |          |          |          |
| Count                                       | 1         | 2        | 0        | 3        |
| % of Total                                  | 2.9%      | 5.7%     | .0%      | 8.6%     |
| Mixed follicular adenoma                    |           |          |          |          |          |
| Count                                       | 5         | 0        | 0        | 5        |
| % of Total                                  | 14.3%     | .0%      | .0%      | 14.3%    |
| Multy nodular goiter                        |           |          |          |          |          |
| Count                                       | 4         | 1        | 0        | 5        |
| Condition                                      | Count | % of Total | % of Total | % of Total | % of Total |
|-----------------------------------------------|-------|------------|------------|------------|------------|
| Multy nodular goiter with fibrosis            | 1     | 11.4%      | 2.9%       | .0%        | 14.3%      |
| Multy nodular goiter with hashimotos thyroiditis | 1   | 2.9%       | .0%        | .0%        | 2.9%       |
| Nodular goiter                                | 2     | 5.7%       | 5.7%       | .0%        | 11.4%      |
| Nodular goiter with Degenerative changes      | 0     | 0%         | 1%         | 0%         | 1%         |
| Nodular goiter with cystic changes            | 1     | 2.9%       | .0%        | .0%        | 2.9%       |
| Follicular adenoma                            | 3     | 8.6%       | .0%        | .0%        | 8.6%       |
| Multy nodular goiter with secondary haemarrhage, no malignancy | 0   | .0%        | 2.9%       | .0%        | 2.9%       |
| Count                                         | 22    | 62.9%      | 31.4%      | 5.7%       | 100.0%     |

**Discussion**

India has the world's largest goitre belt in the sub-Himalayan region [5]. It has been estimated that 12% of adult population in India have a palpable goitre. [6] The patterns of thyroid diseases observed in the current report are comparable with the available world literature. In the study conducted by Handa et al., the incidence of goitres among thyroid nodules was 57.6%, followed by thyroiditis (27.4%), adenomatous goitre (2.3%), follicular/hurthle cell neoplasm (1.4%) and malignant tumors (3.9%), of which papillary carcinoma was the commonest. [5,7] Another Indian study conducted by Andaleeb et al., in 2002 showed 54.7% of multinodular goitre and 27.6% of follicular lesions. [8].

Bandela et al.[9] from Andhra Pradesh reported 10% prevalence of SCH. Gayathri et al.[10] reported 2.8% prevalence of Sub clinical Hypothyroidism. Possible reason for such variability could be the different upper limit cut-offs used for TSH. The patients were between 17 to 90 years of age with a mean age of 41.49 years. These findings correlate with studies conducted by Chowdary et al., Hanumanthappa , who suggested occurrence of multinodular goiter in 2 nd and 3 rd decade of life. Our study findings are similar to the findings of Goellner et al, Altavilla et al and Manderkar et al. It was reported that most of the cases one can diagnose number of nodules clinically. However ultrasonography has an important role in detecting actual number of nodules. This information is very essential for further investigations and necessary management. In 11 patients who have clinically solitary thyroid nodule turned out to be multinodular on USG. Fine needle aspiration cytology is the most important investigation for multinodular goiter. Pre operative evaluation with ultrasound and FNAC can minimize the extent of surgery to be performed. Most of the times multinodular goiter turned out to be a benign pathology. Histopathological examination of the resected specimen proved useful to exclude malignancy.

**Conclusion**

The prevalence of goitre is different according to the geographical region, age and sex. Majority of the study subjects had Swelling of neck. Among Biopsy reports majority were diagnosed as Multy nodular goiter. We recommend further detailed study in this area to explore further details for the benefit of general population.

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