RESEARCH ARTICLE ISSN: 2349-2678

Contents lists available at www.ijpba.in
*International Journal of Pharmaceutical and Biological Science Archive*
NLM (National Library of Medicine ID: 101732687)
Index Copernicus Value 2019: 71.05
Volume 7 Issue 2; March-April; 2019; Page No. 317-321

# A CROSS-SECTIONAL RESEARCH FROM CENTRAL INDIA ON A SOLITARY THYROID NODULE IN A TERTIARY HOSPITAL

**Dr. Sagar Gaurkar[1], Dr. Darshana Tote[2]**

[1]Assistant Professor, Dept. of Surgical Oncology Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences Sawangi (Meghe), Wardha

[2]Associate Professor Dept.of Surgical Oncology Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences Sawangi (Meghe), Wardha

## ABSTRACT

**Background:** Solitary thyroid nodules are a distinct clinical entity with substantial medical implications that can be visually disturbing. The main concern is the possibility of cancer within such a nodule. With the introduction of high-resolution ultrasonography, greater FNAC efficacy, and a better understanding of pathology in recent years, management procedures have changed.

**Aims & objectives:** The goal of this study was to evaluate a solitary lesion in the thyroid at a tertiary health hospital.

**Material and Methods:** The current investigation was a prospective, observational study that included patients of all ages who were brought to the surgical ward with a single thyroid nodule.

**Results:** The researchers looked at 50 cases of solitary thyroid nodules. The majority of the patients were in their third decade, with many more in their fourth. In this study, there was a preponderance of females with thyroid nodules, with a F:M ratio of 23:2. 60 percent of patients presented within 6 months of discovering the nodule, and 88 percent presented during the first two years of swelling. All of the patients complained of a lump in their neck, and 4% of them experienced pain and discomfort due to swelling, with toxic symptoms present in one case (4 percent ). In 16 cases, the right lobe was the most commonly implicated lobe (72 percent ) In 14 cases, the left lobe is implicated (28 percent). The majority of the solitary nodules in this investigation were benign, with only 20% of instances being cancerous. 32 patients were diagnosed with a benign nodular goiter and underwent hemithyroidectomy. While 8 individuals with follicular adenoma had hemithyroidectomy, 4 patients with follicular cancer had hemithyroidectomy, and 6 patients with papillary carcinoma received total thyroidectomy. There was a significant incidence of benign nodules (60%) followed by follicular adenoma (16%) and follicular carcinoma (8%), papillary carcinoma (12%), and multinodular goiter (4%). There were only two occurrences of wound infection (4%), and two patients with seroma (4%). In 92 percent of cases, no additional problems such as voice hemorrhage, thyroid crisis, or RLN palsy were observed. In this study, no deaths were documented.

**Conclusion:** Fine needle aspiration cytology (FNAC) should be performed first in patients with single nodules.

**Keywords:** Solitary thyroid nodule, Papillary carcinoma, FNAC, histopathological examination

## Introduction

Thyroid solitary nodules are widespread, though their prevalence varies by geographical region. Solitary thyroid nodule is a distinct clinical entity with substantial medical implications that can be visually disturbing[1]. The best technique to manage a thyroid nodule remains a matter of debate, and the

*Corresponding author: Dr. Darshana Tote |

operational intervention advocated by most surgeons is not necessarily regarded as necessary by some specialists who advocate either thyroid suppression or observation[2,3]. The main source of concern is the possibility of malignancy within such a nodule, as well as the anxiety that comes with it[4]. This divergence of perspectives may be due to the fact that the thyroid nodule has varied connotations depending on the thyroid doctor, surgeon, or pathologist, yet they are all concerned about the possibility of malignancy. With the introduction of high-resolution ultrasonography, greater FNAC efficacy, and a better understanding of pathology in recent years, management procedures have changed[5]. As a result, preoperative identification of nodules that are likely to contain malignancy is critical, as treatment options vary. Patients with solitary nodules are frequently in a quandary. Although the vast majority of these nodules are benign, there is a considerable risk of cancer[6].

**Aims & objectives:** The goal of this study was to evaluate a solitary lesion in the thyroid at a tertiary health hospital.

**Material and Methods**

The current investigation was a prospective, observational study undertaken at a medical college in central India in the Department of General Surgery. The study lasted one year. The institutional ethical committee approved the study.

Patients hospitalized to the surgical ward with a single thyroid nodule of any age or gender were eligible.

Patients with thyroid swelling other than a clinically confirmed single nodule thyroid are excluded.

The study was discussed, and participants signed a written informed consent form. Clinical information such as age, sex, duration of symptoms, signs and symptoms suggestive of thyrotoxicosis, and malignancy were noted clinically. A variety of haematological and radiological tests were performed. For cytological diagnosis, all of the patients had FNAC. The swellings were classified as benign or malignant, and therapy was planned appropriately. Before surgery, all patients underwent pre-operative LDL to determine the health of their vocal chords. When clinical suspicion exists, a thyroid fraction test and isotope scan are requested in a small number of individuals. Following basic investigations, all of the patients were scheduled for surgery. The vocal cord's post-operative condition was assessed to rule out any recurrent laryngeal nerve injury. The patients' post-operative course was carefully recorded until they were discharged, and all cases were contacted for follow-up after a week in the OPD, then biweekly, then monthly for review. The definitive diagnosis was determined from the histology report. Patients who required revision surgery as determined by the HPR were transferred to a cancer center. The proportion and percentage tests were utilized in this investigation as statistical tests. The collected data was thoroughly examined. The descriptive statistics were used in the statistical analysis.

**Results**

The researchers looked at 50 cases of solitary thyroid nodules. The majority of the patients were in their third decade, with many more in their fourth. The youngest participant was 14 years old, while the oldest was 70 years old. Females with thyroid nodules predominated in this study, with a F:M ratio of 23:2. Sixty percent of patients presented within six months of discovering the nodule, and eighty percent presented during the first two years of swelling. All of the patients had a lump in their neck, and 4% of them felt pain and discomfort from the swelling, as well as toxic symptoms in one case (4 percent ).

**Table 1: General characteristic**

| characteristic | Cases | % |
|---|---|---|
| Age (Group) | | |
| <20 | 2 | 4 |
| 21-30 | 20 | 40 |
| 31-40 | 18 | 36 |
| 41-50 | 6 | 12 |
| >50 | 4 | 8 |
| Gender | | |
| Male | 4 | 8% |
| Female | 46 | 92% |
| Duration of symptoms | | |
| <1 months | 2 | 4% |
| 1-6 months | 30 | 60% |
| 6-12 months | 8 | 16% |
| 1-2 years | 4 | 8% |
| >2 years | 6 | 12% |
| Symptoms | | |
| Swelling | 50 | 100% |
| Pain | 2 | 4% |
| Toxic symptoms | 2 | 4% |

**Table 2: Location and size of nodule**

| Location | No. of cases | Percentage |
|---|---|---|
| Right lobe | 36 | 72% |
| Left lobe | 14 | 28% |
| size of the lesion (in cm) | | |
| <3 | 2 | 4 |
| 3-5 | 42 | 84 |
| >5 | 6 | 12 |

**Table 3: Surgical treatment as per FNAC diagnosis**

| Diagnosis | Hemithyroidectomy | Total thyroidectomy |
|---|---|---|
| MNG | 0 | 0 |
| Benign nodules | 32 | |
| Follicular adenoma | 8 | |
| follicular carcinoma | 4 | |
| Papillary carcinoma | | 6 |

There are no false positives. reported The histology result confirmed that the follicular neoplasm was malignant. All benign cases should visit the OPD if they have any concerns. Patients with carcinoma were constantly watched, and any recurrence was reported to a cancer hospital. In this investigation, there were no cases of anaplastic or medullary cancer.

**Table 4: Incidence of various pathology according to HPR**

| | Cases | % |
|---|---|---|
| Multinodular goiter | 2 | 4% |
| Benign nodules | 30 | 60 |
| Follicular adenoma | 8 | 16% |
| Follicular carcinoma | 4 | 8% |
| Papillary carcinoma | 6 | 12% |

**Table 5: Incidence of postoperative complications**

| Complications | Cases | % |
|---|---|---|
| Wound Infection | 2 | 4% |
| Seroma | 2 | 4% |
| No complications | 46 | 92% |

## Discussion

The self-defined word is currently being used to refer to the solitary thyroid nodule under investigation. For all thyroid surgeons and physicians, clinically isolated thyroid enlargement has long been a mystery. The majority of the patients in this study (92 percent) were between the ages of 21 and 50, with no patients under the age of ten. In a study of 600 cases, SK Bhansali discovered that the greatest incidence was between the ages of 30 and 40 (42%) and Shivangi Rao discovered that 55 percent of cases were between the ages of 30 and 40. Females made up the majority of the patients. In this research, the female to male ratio was 23:2. In comparison to other studies, the female:male ratio was higher[6-8]. The existence of a swelling in the neck was a common symptom across all patients, and the majority of patients presented during the first two years of observing the swelling. There was no discernible link between the onset of symptoms and the development of cancer. The initial signs and symptoms of cancer. Early discovery of malignancy is critical for a better prognosis of the disease, hence awareness is critical. In the Shivangi Rao6 series, lesions in the right lobe were 2 12 times higher than lesions in the left lobe. More gland tissue is found in the right lobe of the gland. It is the cause of an increase in thyroid diseases on the right side. FNAC as a solo diagnostic procedure is highly objective and could only be as good as the performing cytologists, with the risk of human error and mistake. Furthermore, it is a pretty safe operation. The sensitivity of FNAC cytology as a diagnostic tool was found to be 85.87 percent, with a sensitivity of 100 percent. The complication rate among the four participants in this trial was extremely low. Two patients experienced wound infections, and two more had seroma, both of which were managed by removing one or two sutures[9]. In this investigation, no patients experienced recurrent laryngeal nerve palsy or tetany bleeding. In this study, the majority of HPR reports are benign in nature (90%) compared to Fenn et al. (87.5%) and Bhansali et al (80 percent ). In this study, malignant lesions accounted for 20% of the single thyroid nodules. However, the majority of thyroid single nodules were benign (80 percent ). The most prevalent malignancy was papillary carcinoma, which was followed by follicular carcinoma (8 percent). When the histology report was compared to the FNAC report, it was shown that FNAC had a 92.9 percent accuracy rate. In this series, there was a higher incidence of carcinoma in people over the age of 40 than in previous series. The current study was successful in observing and evaluating the advantages of the chosen thyroid nodule therapy technique. Until the recovery phase begins[10]. However, as was the case with many of the series, many patients were lost to follow-up. Many clinicians would advocate and conduct standard surgical removal of all solitary thyroid nodules until recently on the basis that leaving the lesions for conclusive

histological testing was the only way to acquire a firm tissue diagnosis[11]. By utilizing modern-day investigations and their advancements, the need for surgical resection of nodules can now be reduced to a manageable level.

**Conclusion**

Fine needle aspiration cytology (FNAC) should be performed first in patients with single nodules. Thyroid nodules that are more than 4 cm in diameter, symptomatic, or have FNAC results that indicate they are malignant, suspected for malignancy, or indeterminate should be surgically removed. In most non-neoplastic and some neoplastic nodules, hemithyroidectomy is the treatment of choice.

**References**


1. Antti Bronder et al.: Thyroid gland us screening in a Random adult population Radiology. 1991; 181:683-687
2. Akarman M et al.: Sensitivity and specificity of FNAC in diagnosis of tumors of thyroid gland. Act cytol 850-855;1985.
3. Ascharft W. Vonheric; Management of thyroid nodules point I Head and Neck surgery 1981:3:216.
4. Abhu Eslay SA et al.: Thyroid malignancy in multinodular goiter and solitary nodule: Journal of Royal college of surgeons Edin burg;95Oct 40(5):310-12.
5. Shivagi Rao and K. Srinivas Rao Solitary nodules in the thyroid. Indian journal of surgery feb 1977:33:44
6. Namaa KIM et al.: Evaluation of a thyroid nodule, Otolaryngologic clinics of North America 36(2003)17-33.
7. Shirish K. Bhansali. Current management of solitary nodule of the thyroid-recent advances by Roshanlal Gupta; 8th Edition-2nd Volume.
8. A.S. Fenn et al.: Solitary nodules of the thyroid gland. A review of 342 cases. Indian Journal of surgery April 1950;p175-177.
9. Fiore E, Rago T, Provenzale MA, et al. Lower levels of TSH are associated with a lower risk of papillary thyroid cancer in patients with thyroid nodular disease: thyroid autonomy may play a protective role. Endocr Relat Cancer. 2009;16(4):1251–60.
10. Meller J, Becker W. The continuing importance of thyroid scintigraphy in the era of high-resolution ultrasound. Eur J Nucl Med Mol Imaging. 2002;29(Suppl 2):S425–38.
11. Boelaert K, Horacek J, Holder RL, et al. Serum thyrotropin concentration as a novel predictor of malignancy in thyroid nodules investigated by fine-needle aspiration. J Clin Endocrinol Metab. 2006;91(11):4295–301.