WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Clinicopathological Evaluation and Management of Solitary Thyroid Nodules in a Tertiary Healthcare Facility: A Prospective Observational Study

Dr. E Sriram[1], Alluri Sitarama Raju [2], Dr. K Suhas[3]

[1] Junior Resident, Department of General Surgery,
[2] Academy of Medical Sciences (ASRAM), Eluru, India
Email: sriramedpugantichow@gmail.com
[3] Professor and HOD, Department of General Surgery, ASRAM

ABSTRACT :

Background & Aims:

Solitary thyroid nodules (STNs) are common clinical entities that often pose diagnostic challenges due to their variable etiologies and risk of malignancy. This study aimed to determine the incidence, clinical and pathological features, and management strategies for STNs in a tertiary healthcare facility, with emphasis on cytology-histopathology correlation.

Materials and Methods:

This hospital-based prospective observational study was conducted over 16 months (January 2024 to April 2025) in the Department of General Surgery, ASRAM, Eluru. A total of 50 patients presenting with solitary thyroid nodules were included based on predefined criteria. Clinical evaluation, thyroid function tests, ultrasonography, fine-needle aspiration cytology (FNAC), and histopathological examination were performed. Surgical intervention was carried out when indicated.

Results:
Most patients were euthyroid (86%), with 10% hypothyroid and 4% hyperthyroid. FNAC findings were correlated with histopathological outcomes. Among 18 patients diagnosed with follicular neoplasm on FNAC, histopathology revealed follicular adenoma (38.9%), follicular carcinoma (16.7%), follicular variant of papillary thyroid carcinoma (22.2%), nodular goitre (16.7%), and nodular Hashimoto's thyroiditis (5.5%).

Conclusion:
Solitary thyroid nodules require comprehensive evaluation for accurate diagnosis and management. FNAC serves as an essential first-line diagnostic tool, but histopathological confirmation remains indispensable for definitive diagnosis and surgical decision-making.

Keywords: Solitary thyroid nodule, FNAC, Hypothyroidism, Follicular neoplasm, Histopathology, Malignancy.

1. INTRODUCTION

Thyroid nodules are frequently encountered in clinical practice, with solitary nodules representing a distinct subset that warrants careful evaluation. The potential for malignancy, coupled with varied clinical presentations, necessitates a structured diagnostic and therapeutic approach. This study was designed to assess the incidence, demographic distribution, clinicopathological features, and management strategies of solitary thyroid nodules in a tertiary care setting.

2. MATERIALS AND METHODS

Study Design: Prospective observational study
Study Duration: January 2024 to April 2025 (16 months)
Study Setting: Department of General Surgery, ASRAM, Eluru, India
Sample Size: 50 patients

2.1 Inclusion Criteria:

- Patients with a clinically or radiologically confirmed solitary thyroid nodule
- Age ≥18 years
- Consent for participation and surgery if required

2.2 Exclusion Criteria:

- Multinodular goitre
- Previous thyroid surgery
- Known thyroid malignancy

2.3 Data Collection:

- Clinical history and examination
- Thyroid function tests (T3, T4, TSH)
- Ultrasonography
- FNAC using Bethesda classification
- Histopathological examination post-surgery

3. RESULTS

Most patients were euthyroid (86%), 10% hypothyroid, and 4% hyperthyroid.

FNAC vs Histopathology Correlation:
- Follicular Adenoma: 7 (38.9%)
- Follicular Carcinoma: 3 (16.7%)
- FVPTC: 4 (22.2%)
- Nodular Goitre: 3 (16.7%)
- Hashimoto's Thyroiditis (Nodular Variant): 1 (5.5%)

4. DISCUSSION

The predominance of euthyroid status among patients aligns with existing literature, suggesting that functional thyroid status may not always correlate with nodule pathology. The FNAC-histopathology correlation revealed diagnostic limitations in cytology alone, particularly in follicular neoplasms, where definitive diagnosis requires capsular and vascular invasion assessment. The presence of FVPTC and follicular carcinoma underscores the need for vigilant evaluation and timely surgical intervention.

5. CONCLUSION

Solitary thyroid nodules require a multidisciplinary approach for accurate diagnosis and management. This study reinforces the role of FNAC as a preliminary tool, while highlighting the indispensability of histopathological confirmation. The findings advocate for individualized surgical planning based on cytological risk stratification and clinical judgment.

REFERENCES

Ugale SS, Khadatkar AR, Parwani S, Fulare S, Pisal SS. (2024). To Study the Clinical Profile and Management of Solitary Thyroid Nodule: An Observational Analytical Study. Research Journal of Medical Sciences, 18, 122-126.
Rajput R, Joshi SR, Bajaj S, et al. (2024). The diagnosis and management of thyroid nodules: Consensus statement of the Indian Thyroid Society. Thyroid Research and Practice, 20, 43-58.
Goel KS, Goel S. (2019). Clinical Approach to Management of Solitary Thyroid Nodule. Int J Contemp Med Res, 6(7), G1-G6.
Desai K, Jani H, Jani S, Barot A, Goswami H. (2021). Histopathological and cytological correlation of thyroid lesions. Int J Clin Diagn Pathol, 4(2), 77-80.
Jeelani T, Rafiq D, Nazir W, et al. (2018). Histopathological and Cytological Correlation of Thyroid Nodules. Int J Contemp Med Res, 5(1), 28-31.
Osseis M, Jammal G, Kazan D, et al. (2023). Comparison between Fine Needle Aspiration Cytology with Histopathology in the Diagnosis of Thyroid Nodules. J Pers Med, 13(8), 1197.