IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Study of Cytology of Thyroid Lesions in West Bengal Population Retrospective Study

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Abstract

Background: Cytology of thyroid lesion has very bad prognostic because 5 to 6% of lesions are found to be malignant. Hence such lesions should not be ignored and treated at the initial stage to avoid morbidity and mortality.

Method: 142 (one hundred forty two) adult patients aged between 20 to 50 year were having thyroid swellings were studied by FNAC technique and classified with cytological examination based on Bethesda classification of 6 groups.

Results: 10 (7.04%) were ND/USA, 112 (78.8%) were Benign, 4 (2.8%) FN/SFN, 3 (2.11%) SFM, 9 (6.8%) Malignancy

Conclusion: This early pragmatic cyto-pathological study will be the tool for oncological surgeons to treat such patients efficiently and avoid morbidity and mortality so that such patients can lead normal life.

Keywords: FNAC, ND/UNS, Benign AUS/FLUS, FN/SFN, SFM, West Bengal

Introduction

Thyroid nodular lesions are common clinical problem in the world. These are more common in women and in areas of iodine deficiency. Exposure to ionizing radiation in child hood and adolescence increases the risk of solitary thyroid lesion nodules and malignancy of thyroid. Prevalence of thyroid nodular lesion ranges between 4 to 8% globally [(1)]. A solitary thyroid produces is palpable in thyroid gland has otherwise a normal appearance [(2)]. The majority of the thyroid lesions are asymptomatic and only about 5% of all palpable nodules are found to be malignant. A variety of test has been employed to separate benign from malignant thyroid lesions [(3)]. These test include-isotope scanning and fine needle aspiration cytology. Combined use of isotope scanning fine needle aspiration cytology and histopathology of Thyroid offers the best diagnostic strategy [(4)]. As the isotopic scanning is costly hence initially FNAC was ruled out and positive malignancy was confirmed by isotopic scanning. Moreover FNAC technique is non-toxic method and safer to patients [(5)]. Hence fine needle Aspiration (FNA) is carried out to evaluate different types of lesion.

Material and Method

142 (one hundred forty two) adult patients aged between 20 to 50 years visited to Gouri Devi Institute of Medical Science, G T Road, Durgapur-713212 West Bengal were studied.

Inclusive Criteria: The patients having thyroid swelling in which cytological studies were done.

Exclusion Criteria: The patients had inadequate aspiration on FNAC patients previously under gone thyroid surgery immune compromised patients were excluded from study.

Method: Detailed history of every patient was noted, clinical examination, radiological investigation, FNA (Fine Needle Aspire) was performed from different sites of thyroid lump using a 10 ml disposable syringe and 23/24 gauge needle without local anaesthesia FNA air-dried smears were stained with Giemsa stain.

Cytological examination based on Bethesda classification. After careful and thorough examination of the MGG stained aspirate smears, FNAC results were

classified into six (6) groups: (1) Non-diagnostic / unsatisfactory (2) Benign (consisting of goitre and thyroiditis) (3) Atypia of un-determined significance (AUS) / Follicular lesion of un-determined significance (FLUS) (4) Follicular Neoplasm (FM) / Suspicious for follicular neoplasm (SFN) (5) Suspicious for malignancy (SFM) (6) Malignant.

Duration of study was one year and seven months (15-01-2019 to 31-08-2020).

Statistical analysis: Different lesions different categories were classified with percentage. The statistical analysis was carried out in SPSS software. The ratio of the male and female was 1:2.

Observation and Results

Table-1: Classification of thyroid lesions 10 (7.04%) were ND/UNS, 12 (78.8%) were Benign, 4 (2.81%) were AUS/FLUS, 4 (2.81%) were FN/SFN cases, 3 (2.11%) were SFM, 9 (6.33%) were Malignant cases.

Table-2: Classification of subcategories as per Bethesda system for reporting thyroid cyto-pathology (1) Out of 10 – 4 were cyst fluid only, 2 virtually a cellular specimen, 2 were obscuring blood.

In Benign cases out of 112 – 77 were benign follicular nodule, 28 were lymphocytic thyroiditis, 7 were granulomatous thyroiditis,

(3) 4 cases were AUS/FLUS, (4) 4 cases were SFN, (5) 3 cases were SFM, (6) out of 9 malignant cases – 7 were papillary thyroid carcinoma, 2 were medullary thyroid carcinoma.

Table-3: Present findings are compared with previous workers.

Discussion

The present study of cytology of thyroid lesions in the West Bengal Population – In the classification of 112 (78.8%) Benign, 4 (2.8%) AUS/FLUS, 4 (2.8%) FN/SFN, 3 (2.11%), SFM 9 (6.3%), Malignancy (Table-1) Classification of sub-categories in Bethersda system for reporting cyto-pathology of Thyroid were – (1) Out of 10 – 4 were cyst fluid only, 2 cases were virtually cellular, 2 were obscuring blood. (2) out of 112 Benign cases 77 were Benign follicular nodule, 28 were lymphocytic thyroiditis, 7 were granulamatous thyroditits, (3) 4 cases of AUS / FLUS, (4) 4 SFN, (5) 3 SFM cases (6) out of 9 Malignant cases 7 were papillary thyroid carcinoma, 2 Medullary thyroid carcinoma. These findings are more or less in agreement with previous studies [(6)(7)(8)].

It is reported that nodules or lesions are the weak predictor of histological malignancy FNAC is a sensitive and highly specific method of evaluation malignancy of thyroid lesions [(9)] and false positive rate of FNAC was found to be benign lesions.

As thyroid gland is a highly vascular organ, with each impending trauma the chances of aspirating haemorrigic fluid, so it is advised to keep number of aspirates minimum, It is also believed that, cellularity criteria for adequacy also vary depending on whether the aspired lesion is solid or cystic and whether aspire was performed under palpation or ultrasound guidance. Aspirates that contain only cyst fluid and erythrocytes are inadequate [(11)]. The Bethesda system of reporting thyroid cytology is a standardized initial modality for diagnosing different thyroid lesions. It can detect benign and malignant lesions thus avoid un-necessary surgery for benign thyroid lesions.

Summary and Conclusion

The present study of cytology of thyroid lesions in west Bengal population FNAC is rapid, simple and cost-effective diagnostic modality in investigation of thyroid, lesions with high sensitivity and specificity and accuracy. It can be used as on excellent first line method for investigating the nature lesion, Bethesda system is very useful as it is simplified, systematic standardized system for reporting cyto-pathology which provides better communication between cyto-pathology and clinician leading to more consistent approach. But this study demands further genetic, histo-pathologic, hormonal nutritional, immunological, pharmacological studies because exact pathogenesis of thyroid lesions is still un-clear.

Table – 1

Classification of Thyroid lesions

(Total No: 142)

Sl No	Cytological Categories	Frequency	Percentage (%)
1	(ND/UNS) Non-Diagnostic or Un-Satisfactory	10	7.04 %
2	Benign	112	78.8 %
3	AUS / FLUS (Atypia of Un-determined significance	4	2.8 %
4	FN/SFN (Suspicious for Follicular Neoplasm)	4	2.81 %
5	SFM (Suspicious for Malignancy)	3	2.11 %
6	Malignant	9	6.33 %

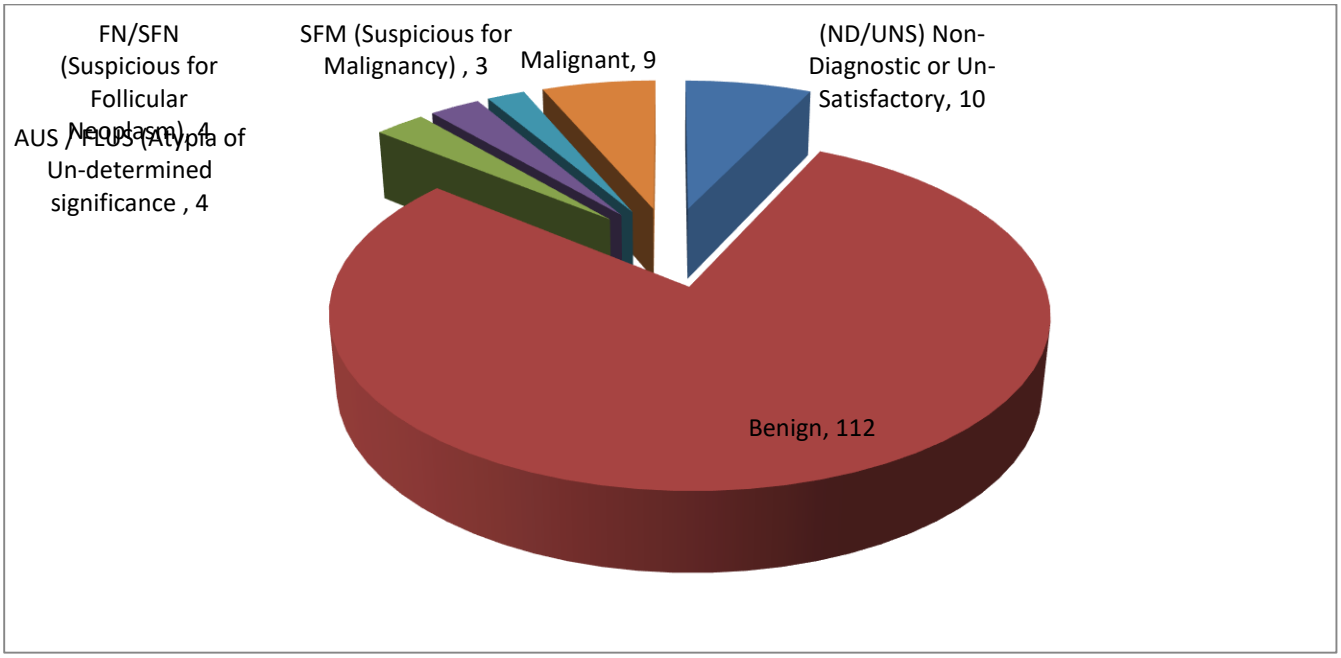


Table – 2

Classification of sub-categories in Bethesda system for reporting Thyroid cyto-pathology

(Total No: 142)

Sl No	Cytological categories	Sub categories	No. of cases	Total No of cases
1	ND/UNS	Cyst. Fluid only	4	10
		Virtually a cellular specimen	2	
		Obscuring Blood	2	
2	Benign	Benign Follicular nodule	77	112
		Lymphocytic thyroditis	28	
		Granulomartous thyrodits	7	
3	AUS/FLUS	--	4	4
4	SFN	--	4	4
5	SFM	Suspicious for papillary carcinoma	3	3
6	Malignant	Papillary thyroid	7	9
		Carcinoma Medullary thyroid	2	

The majority of benign cases (112) and least number of SFM are observed.

Table – 2
Classification of sub-categories in Bethesda system for reporting Thyroid cyto-pathology

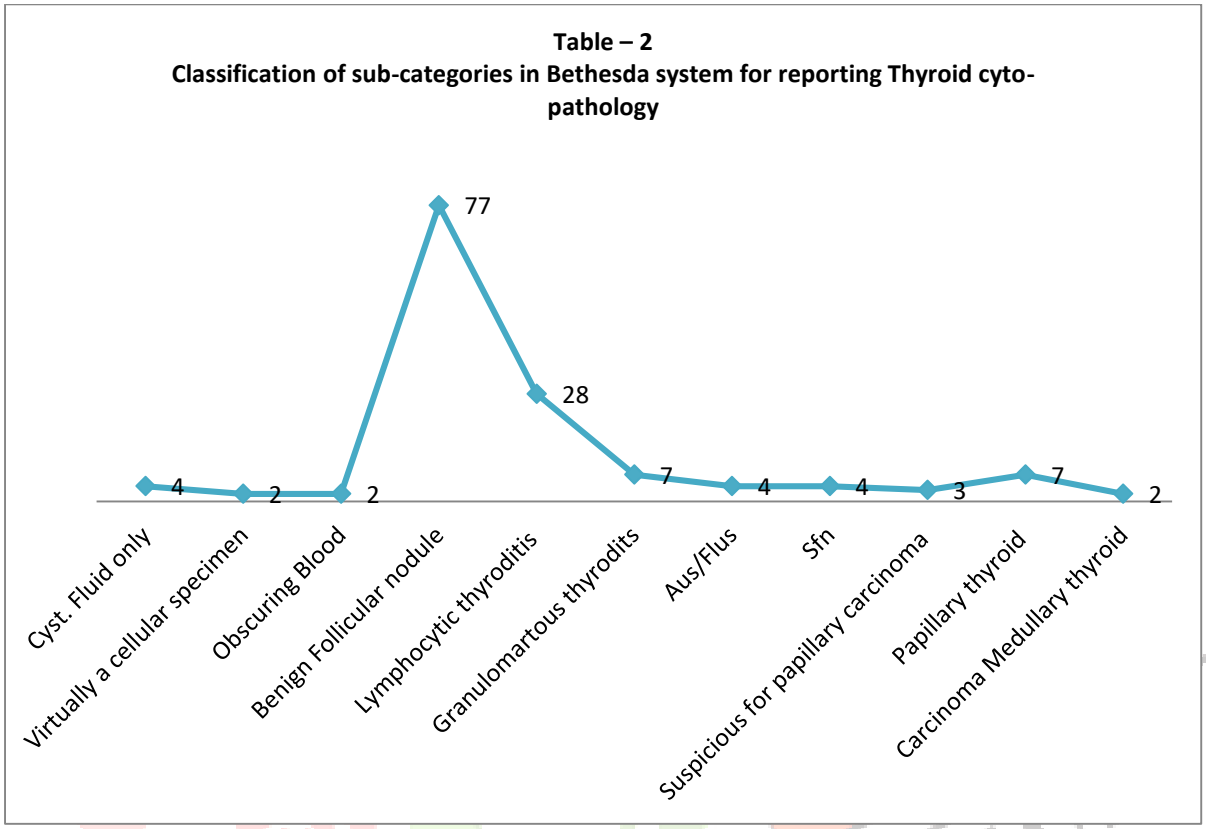
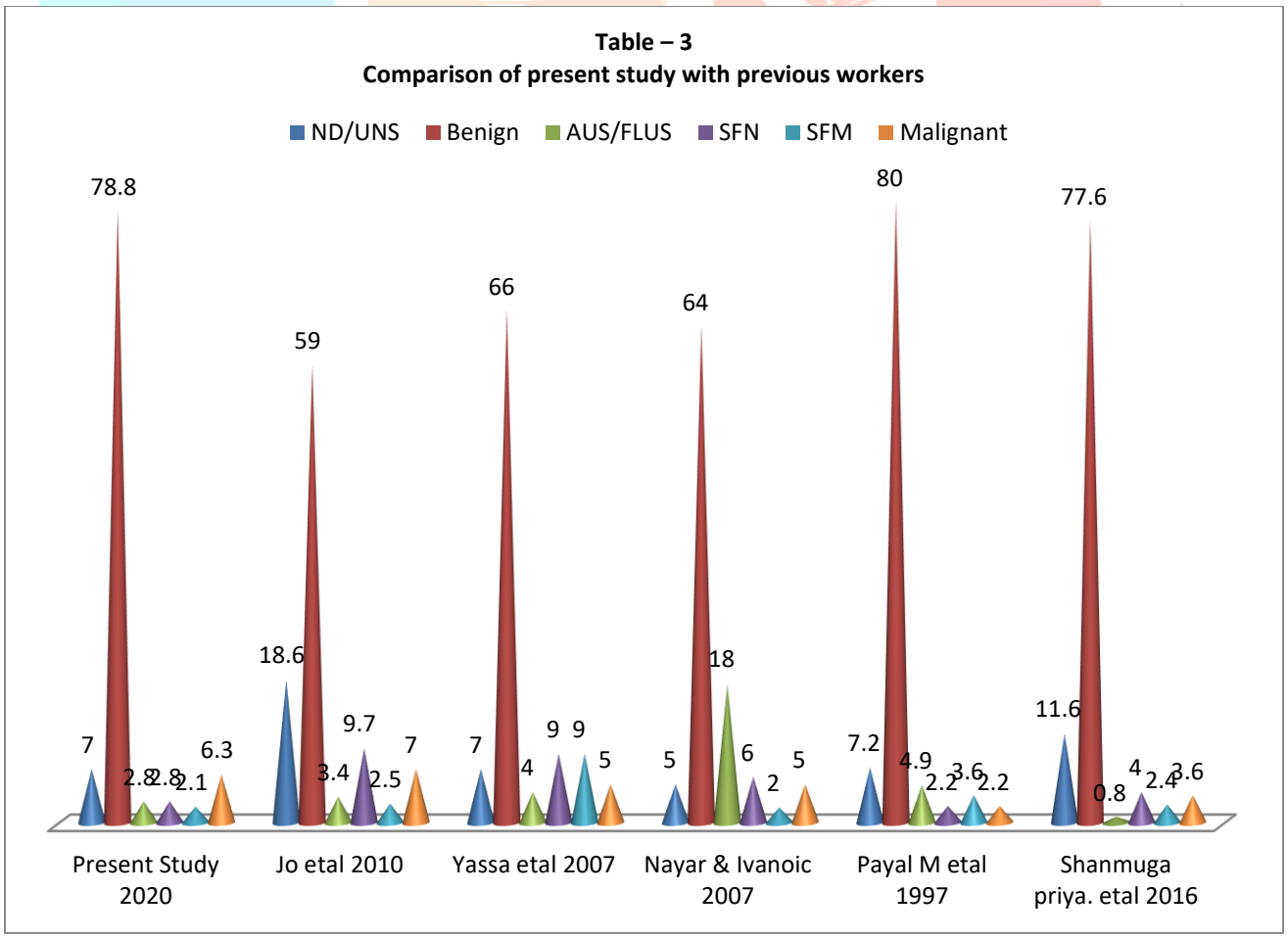


Table – 3

Comparison of present study with previous workers

Diagnostic particulars	Present Study	Jo etal 2010	Yassa etal 2007	Nayar & Ivanoic 2007	Payal M etal 1997	Shanmuga priya. etal 2016
ND/UNS	7.04%	18.6%	7%	5%	7.2%	11.6%
Benign	78.8%	59%	66%	64%	80%	77.6%
AUS/FLUS	2.8%	3.4%	4%	18%	4.9%	0.8%
SFN	2.8%	9.7%	9%	6%	2.2%	4%
SFM	2.1%	2.5%	9%	2%	3.6%	2.4%
Malignant	6.3%	7%	5%	5%	2.2%	3.6%

Present study findings are more or less in agreement with previous studies.



References

1. Nggada A, Musa B Galr – Fine needle aspiration cytology of thyroid nodules – International Journal of Pathology 2006 vol. 5 (1), 28-32.
2. M J Welker and Orlov – Thyroid nodules J of Am. Family physician 2003, vol 67 (3) 559-73.
3. N Hussein and M Anwar Pattern of Surgical related thyroid disease in Karachi Bio Medica 2005, vol 21 (1), 18-20.
4. Rehman S, Mirza and Khwaja – Cytological and histological correlations of solitary Thyroid Nodule J. of Surgical oncology 2002, vol 80 (3), 157-170.
5. A. N. Khalid C S Holien beak SA – The cost effectiveness of Iodine 131 scintigraphy, ultra-sonography and free needle aspiration biopsy. Archives of otolaryngology – Head and Neck surgery 2006, vol. 132 (3), 244-250.
6. Shah SN, Joshi SR – Goitre and goitrogenesis – same insights J. Assoc. Phys. 2000, 48 (1), 13-4
7. Hoffman HW – Diagnostic accuracy of FNAC biopsy in the diagnosis of thyroid malignancy. Pathologist 1986, vol. 9 (1), 9-14.
8. Ashcraft MW, Van Herle – Management of thyroid nodules. Head Neck surg. 1981, 13 (3), 297-322.
9. J Y Kwak, Koo H – Value of USG correlation of thyroid nodules with the initial benign cytological results. Radiology 2010, 254 (1), 292-300.
10. Mondal SK, Sinha S – The Bethesda system for reporting thyroid fine needle aspirates. A cytological study with histological follow up J. cyto. 2013, 30, 94-9.
11. Yassa L, Cibas E S – Long term assessment of multidisciplinary appearance to thyroid nodule diagnostic evaluation cancer 2007, 111, 508-16.