

Evaluation and Study of Solitary Thyroid Nodule in 102 Cases

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Abstract

Aims and Objective: Evaluation of Solitary thyroid nodule to differentiate benign from malignant lesion and establish correlation between USG, FNAC and Histopathological examination (HPE).

Materials and Methods: Study design: It is a prospective study of patients admitted in ENT department of Civil Hospital Ahmadabad for solitary thyroid nodule from August 2018 to October 2019.

Study Tools: A total 102 patients were evaluated. Help was taken from radiology department for USG neck screening and also from pathology department where FNAC and HPE findings are correlated.

Observation and Results: Out of 21 cases diagnosed as malignant on ultrasound, 18 were confirmed as malignant on FNAC, 3 were found to be benign. So, correlation between USG and FNAC is 85.7%.

Out of 21 cases diagnosed as malignant on ultrasound, 16 were confirmed as malignant by HPE, rest were found to be benign. So, correlation between USG and HPE is 76.1%.

Out of 18 cases diagnosed as malignant on FNAC, 16 were confirmed by histopathology postoperatively. So, correlation between FNAC AND HPE is 88.8%.

Conclusion: In our study correlation between USG and FNAC was 85.7%. Correlation between FNAC and HPE is 88%. Fine-needle aspiration cytology is recommended to be a cost-effective procedure in the initial assessment and management of thyroid nodules [3,6].

Detecting malignancy preoperatively allows total thyroidectomy in a single operation without the need of removal of remnant thyroid in second surgery.

Keywords: Solitary Thyroid Nodule; Benign; Malignant; USG; HPE; FNAC

Introduction

Thyroid gland is an endocrine gland consisting of two lobes connected by an isthmus.

Thyroid nodules are nodules (raised areas of tissue or fluid) which commonly arise within an otherwise normal thyroid gland [1].

Thyroid nodules (TNs) are among the common diseases of the endocrine system, with 3% - 7% prevalence by palpation [2].

Solitary thyroid nodule is a distinct lesion in thyroid that is palpably or radiologically distinct from thyroid parenchyma.

Materials and Methods

It is a prospective study of 102 patients admitted in ENT department of Civil Hospital Ahmadabad for solitary thyroid nodule from 2018 to 2019.

Help was taken from radiology department for USG neck screening and also from pathology department where FNAC and HPE findings are correlated.

Figure 1: FNAC of colloid goitre.

Figure 2: HPE of papillary thyroid carcinoma.

Inclusion criteria:

- Patient with clinically palpable single thyroid nodule.
- Age group 11 to 75 years.
- Euthyroid patients.

Exclusion criteria:

- Swelling in neck which moves with protrusion of tongue. E.g. Thyroglossal duct cyst.
- Patient who denies proper history.
- Patient who denies consent for surgery.
- Patient without next of kin.
- Anaplastic carcinoma.

Observation and Results

Age wise distribution

Sex wise distribution

Age (in years)	No
<= 20	12
21 - 30	25
31 - 40	43
41 - 50	14
> 50	08

Table 1

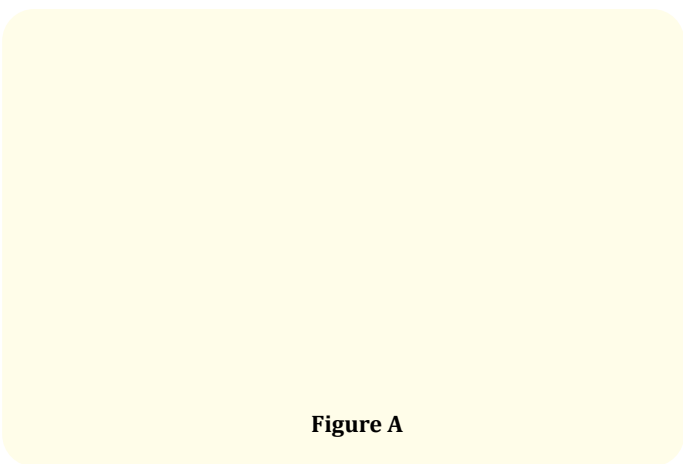


Figure A

Distribution of lesion on USG according to TIRADS

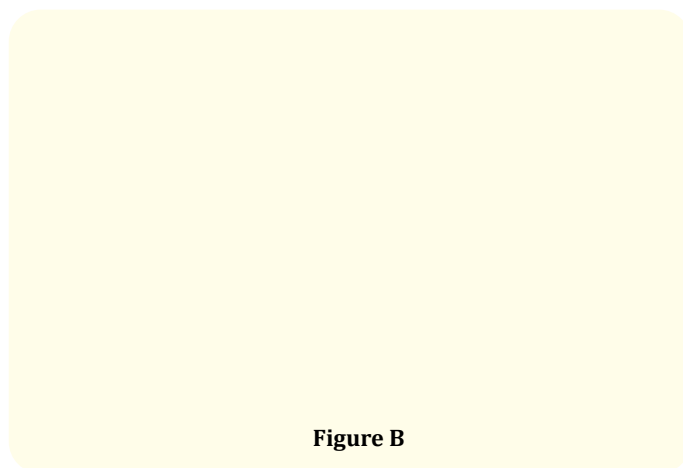


Figure B

Classification	Category	No.
Highly suspicious (TIRAD5)	Hypoechoic solid nodule Irregular margin Microcalcification Extra thyroid extension Increased vascularity	21
Intermediate suspicion (TIRAD4)	Hypoechoic solid nodule Smooth margin	11
Low suspicion (TIRAD3)	Hyper echoic solid nodule	64
Very low suspicion (TIRAD2)	Partially cystic nodule	6
Benign (TIRAD1)	Purely cystic nodule	0

Table 2

Distribution of lesion ACC to Bethesda system for thyroid cytology

Bethesda system for thyroid cytology		No.
Category 1	Cystic fluid only	0
Category 2	Benign follicular nodule, Hashimoto's thyroiditis, Granulomatous thyroiditis	79
Category 3	Atypia of undetermined significance	5
Category 4	Follicular neoplasm	7
Category 5	Suspicious of medullary or papillary carcinoma	6
Category 6	Medullary carcinoma, papillary carcinoma, poorly differentiated	5

Table 3

Histopathological diagnosis

HPE	No
Colloid/Nodular Goiter	64
Hyperplastic Nodule	8
Hashimoto's Thyroiditis	2
Adenomatous Goiter	12
Follicular Carcinoma	9
Papillary Carcinoma	5
Medullary Carcinoma	2

Table 4

Comparison of benign to malignant result on HPE in different studies

Study	Benign	Malignant	Ratio
Tabaqchali., <i>et al.</i>	145	94	1.5:1
Kamal., <i>et al.</i>	159	22	7:1
Safirullah., <i>et al.</i>	265	35	7.5:1
Maddineni R., <i>et al.</i>	82	18	4.5:1
Mehta S., <i>et al.</i>	42	8	5:1
Our study	84	16	5.2:1

Table 5

Out of 21 cases diagnosed as malignant on ultrasound, 18 were confirmed as malignant on FNAC, 3 were found to be benign. So, correlation between USG and FNAC is 85.7%.

Out of 21 cases diagnosed as malignant on ultrasound, 16 were confirmed as malignant by HPE, 5 were found to be benign. So, correlation between USG and HPE is 76.1%.

Out of 18 cases diagnosed as malignant on FNAC, 16 were confirmed by histopathology postoperatively. So, correlation between FNAC AND HPE is 88.8%.

Discussion and Conclusion

Thyroid nodules are more common in females as noted in the present study [3,5].

In our study correlation between USG and FNAC was 85.7%. Correlation between USG and HPE is 76.1%. Correlation between FNAC and HPE is 88%.

Figure C

FNAC is recommended to be a cost-effective procedure in the initial assessment and management of thyroid nodules [3,6].

Detecting malignancy preoperatively allows total thyroidectomy in a single operation without the need of removal of remnant thyroid in second surgery.

Overall incidence of malignancy in thyroid swelling varies from 10% to 30% acc to various studies [4]. In our study is 16% which is comparable to Mehta S., *et al.*

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