

A DISSERTATION ON  
**“A STUDY ON INCIDENTAL FINDING OF  
THYROID MALIGNANCY IN BENIGN  
THYROID DISEASE”**

Dissertation submitted to  
THE TAMIL NADU Dr. M. G. R. MEDICAL  
UNIVERSITY,  
CHENNAI

with partial fulfilment of the regulations  
for the Award of the degree  
M.S. (General Surgery)  
Branch –I



INSTITUTE OF GENERAL SURGERY,  
MADRAS MEDICAL COLLEGE, CHENNAI.

MAY 2020.

## **CERTIFICATE**

This is to certify that the dissertation titled “**A STUDY ON INCIDENTAL FINDING OF THYROID MALIGNANCY IN BENIGN THYROID DISEASE**” is the bonafide work of **Dr.I.ARUN PRAKASH** with reg no **221711002** during his M.S. (General Surgery) programme between **2017 - 2020**, and was done under my supervision and is, herewith submitted in the partial fulfilment of **M.S. (BRANCH-I) - General Surgery, May 2020** examination of **The Tamil Nadu Dr. M. G. R. Medical University**.

**PROF. R.KANNAN,MS,  
DIRECTOR, INSTITUTE OF GENERAL SURGERY,  
MADRAS MEDICAL COLLEGE  
& RAJIV GANDHI GOVERNMENT GENERAL  
HOSPITAL,  
CHENNAI – 600 003.**

**DR. S. MANISELVI, M.S., D.G.O., FICS.,  
PROFESSOR OF SURGERY, INSTITUTE OF  
GENERAL SURGERY,  
MADRAS MEDICAL COLLEGE  
& RAJIV GANDHI GOVERNMENT GENERAL  
HOSPITAL,  
CHENNAI – 600 003.**

**DR. R. JAYANTHI, M.D., MRCP,  
THE DEAN,  
MADRAS MEDICAL COLLEGE,  
& RAJIV GANDHI GOVERNMENT  
GENERAL HOSPITAL,  
CHENNAI – 600 003**

## **DECLARATION**

I hereby, declare that this dissertation titled “A STUDY ON INCIDENTAL FINDING OF THYROID MALIGNANCY IN BENIGN THYROID DISEASE” represents a genuine work of mine. The contributions of any supervisors to the research are consistent with normal supervisory practice, and are acknowledged.

I also affirm that this bonafide work or part of this work was not submitted by me or any others for any award, degree or diploma to any other University board, either in India or abroad.

This is submitted to The Tamil Nadu Dr. M.G.R Medical University, Chennai in partial fulfillment of the rules and regulations for the award of Master of Surgery Degree Branch- I (General Surgery).

**Date:**

**Place:**

**Dr. I.ARUN PRAKASH**

# **ACKNOWLEDGEMENT**

**“Research is to see what everybody else has seen, and to think what nobody else has thought.” - Albert Szent-Gyorgyi**

I realize with a deep sense of humility and gratefulness that whatever little I have done now would not have been possible, but for certain mentors, who have enlightened my path to wisdom.

**“Surgery is learnt by apprenticeship and not from textbooks, not even from one profusely illustrated ” - Ian Aird.**

It is my special privilege and great pleasure to record my deep sense of gratitude to my respected professor and guide **PROF. S. MANISELVI, M.S., D.G.O., FICS**, but for whose constant guidance, help and encouragement this research work would not have been made possible. The unflinching academic, moral and psychological support will remain ever fresh in my memory for years to come . Words cannot simply express my gratitude to them for imparting me the surgical skills I have acquired.

I would like to express my sincere thanks to **PROF. DR. S. MANISELVI, MS,DGO,FICS**, for his never-ending support, encouragement and mentorship both, during my M.S. programme and thesis preparation. He sowed the first few seeds on this dissertation topic in my mind, and they have now blossomed into a huge tree bearing wonderful flowers.

I would like to specially mention **Prof. R. KANNAN,MS, Director, Institute of General Surgery, Madras Medical College**, for his constant support and advice.

I would fail in my duty if I don't thank **Dr. D. MANIVANNAN, M.S., Dr. D. VINODH, M. S., Dr. T. PAULIA DEVI M. S.**, Assistant professors of Surgery, for all of them have given me invaluable advice, guided me and have been most kind and patient to me. I am blessed to have had them right through all 3 years of my M.S. General Surgery programme.

All along the way, I have been supported and encouraged by all my Professors, Associate Professors and Assistant Professors who helped me to reach where I am.

I also thank my fellow post-graduates, senior post-graduates, colleagues and juniors who have extended their co - operation in my work. I would also like to thank MRD department for helping me with the arduous task of data collection.

I thank the Dean, Madras Medical College & Rajiv Gandhi Govt. General Hospital for permitting me to conduct this study.

I would be failing in my duty if I do not show my deep sense of gratitude to all the patients who have helped me to become a surgeon and especially those who consented to be part of this study.

With deep reverence, I thank my parents, my grandparents and my wife for their unflinching support and love. I thank Almighty for blessing me with a wonderful family to whom I have dedicated this thesis

**Date:**

**Place:**

**Dr. I. ARUN PRAKASH**

## LIST OF ABBREVIATIONS

AG	Adenomatous goiter
ATC	Anaplastic thyroid carcinoma
ECG	Electrocardiogram
FNAC	Fine needle aspiration cytology
HPE	Histopathological examination
MIT	Monoiodotyrosine
MNG	Multinodular goiter
MTC	Medullary thyroid carcinoma
RLN	Recurrent laryngeal nerve
SNT	Solitary nodule thyroid
T3	Tri-iodotyrosine
T4	Thyroxine
TBG	Thyroxine binding globulin
TR	Thyroid hormone receptor
USG	Ultrasonography

## ABSTRACT

### BACKGROUND

To study the prevalence of thyroid carcinoma as an incidental finding in patients treated surgically for presumably benign thyroid disease. Thyroid disorders are most common endocrine disorders world wide. Most of the disorders surgery remains the corner stone in the management of thyroid disorders. My study mainly focuses on the diagnosis of malignancy in the post op HPE for various surgeries done eventhough preoperative evaluation shows the benign nature of disease

### OBJECTIVES OF THE STUDY

To study the prevalence of thyroid carcinoma as an incidental finding in patients treated surgically for presumably benign thyroid disease

### MATERIALS AND METHODS

#### STUDY CENTRE

Institute of General surgery, Madras Medical College and Rajiv Gandhi Government General Hospital

#### DURATION OF STUDY

December 2017 TO January 2019

#### STUDY DESIGN

PROSPECTIVE AND RETROSPECTIVE( OBSERVATIONAL)

SAMPLE SIZE: 102

## INCLUSION CRITERIA

All patients with clinical,radiological and FNAC proven benign Thyroid Disease

## EXCLUSION CRITERIA

Patients with radiological,cytological proven diagnosis of thyroid malignancy and pregnant women are excluded from this study



## RESULTS

Prospective and Retrospective study on incidental finding of thyroid malignancy done at RGGGH Chennai from December 2017 to January 2019. A Total of 102 patients were observed . sex wise distribution shows female predominance.majority of solitary nodule found benign preop turned out to be malignant in post op HPE. Malignant suspicion in male goitre is high. Ratio of female to male in malignancy is 3:1 world wide our study also has similsr results. Incidence of malignancy in a sum of 102 patients is 4%. Papillary carcinoma being most common with 3% and follicular 1%.

## CONCLUSION

Thyroid disorders are most common disorder worldwide . In that thyroid neoplasms accounts about 1.7/100000 population with female to male ratio of about 3:1. Many advanced diagnostic modalities available. Surgery remains cornerstone in the management in most of thyroid malignancy.

In our study around 102 patients are observed whose clinical presentation , radiological presentation, tissue diagnosis found to be benign pre operatively turned malignant on post operative histopathological examination with incidental finding of malignancy with percentage of 4 compared to global study in which the percentage is around 7

## TABLE OF CONTENTS

<b>S.No.</b>	<b>Topic</b>	<b>Page No.</b>
1	Introduction	
2	Aims And Objectives	
3	Review Of Literature	
4	Methodology	
5	Results	
6	Discussion	
7	Conclusion	
8	Bibliography	
9	Annexure	
10	Plagiarism certificate	

## INTRODUCTION

Thyroid diseases are common worldwide. In India there are significant burden to thyroid diseases. According to study 42 million people in India suffer from thyroid disorders it comprises 5 spectrum to disorders namely \*hypothyroidism \*hyperthyroidism \*goiter & iodine deficiency disorder \*hashimotos thyroiditis \*thyroid malignancy

Thyroid diseases are commonest endocrine disorder all over the world. It is commonest in India. Thyroid disorder differs from other endocrine disorders in term of diagnosis and management.

My article will mainly focus on incidental study of thyroid malignancy in a patient treated for benign thyroid diseases

## THYROID MALIGNANCY

Most common endocrine malignancy incidence is 7.7 lakhs female affected 3 times more common than male. Most common histological variety – papillary carcinoma age group 40-45 years in females , 65-69 years in male. Related frequency in India \_\_\_\_\_. Highest incidence in Thiruvananthapuram district.

### AIM OF STUDY

Study on incidental finding of thyroid malignancy in a patient treated for a benign thyroid disease

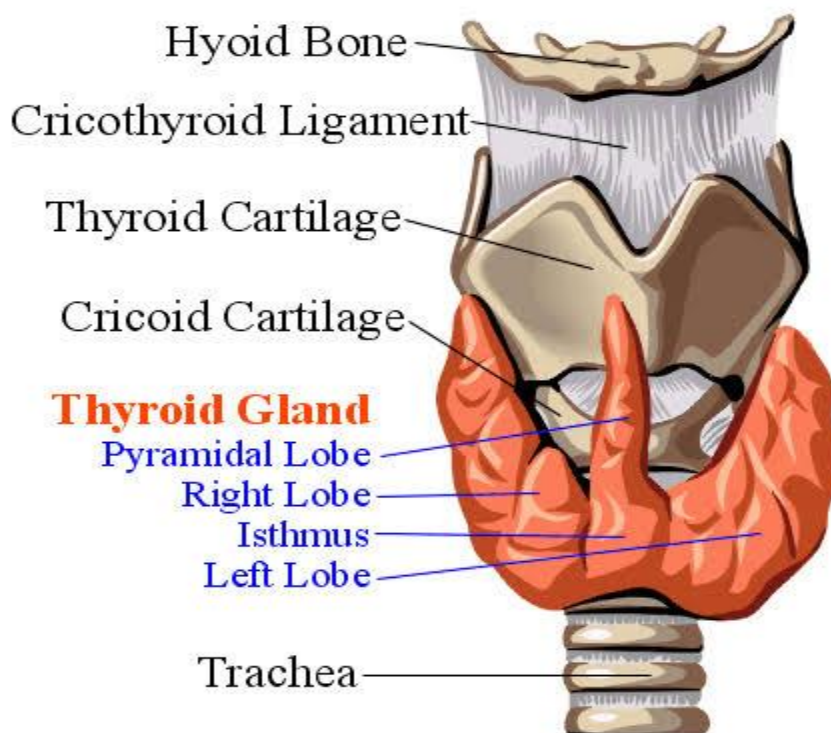
### OBJECTIVES OF STUDY:

To study the prevalence of thyroid carcinoma as an incidental finding in a patient treated surgically for presumably benign thyroid disease.

## REVIEW OF LITERATURE

### THYROID ANATOMY:

Weight of normal thyroid gland is 20 to 25g. More than 90 percent of body's iodine is stored in thyroid. Daily iodine requirement is 100 to 150mg. Father of thyroid surgery is **theodor kocher**. Thyroid gland consists of two lobes connected together by isthmus. Isthmus is situated below the cricoid cartilage. Anteriorly present with relation to tracheal rings 2,3,4. Pyramidal lobe is present in 50% of individuals. Thyroid gland is enveloped by loosely containing fascia -formed by the partition of deep cervical fascia. Thyroid true capsule is thin-very adherent to the gland. It sends septae to glands forming the pseudolobules. Investing layer of deep cervical fascia encloses the gland and condenses posteriorly to form suspensory ligament of berry



Adapted from Corel Draw 9

Family Practice  
notebook.com  
a Resource for Physicians

## BLOOD SUPPLY

### ARTERIAL SUPPLY

Thyroid gland is supplied by

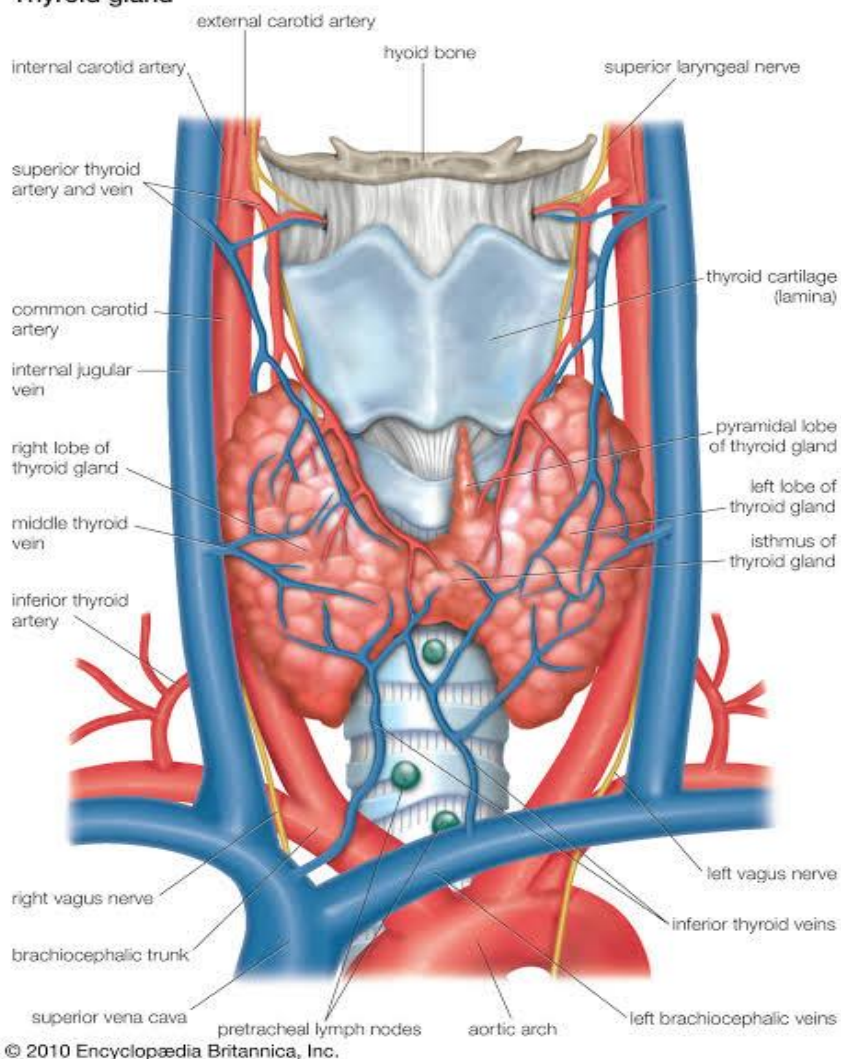
Superior thyroid artery- branch of external carotid artery

Inferior thyroid artery- branch of thyro cervical trunk

Thyroidea ima artery- 1 to 4% of individuals which is a direct branch from aorta

Tracheal and esophageal branches

#### Thyroid gland



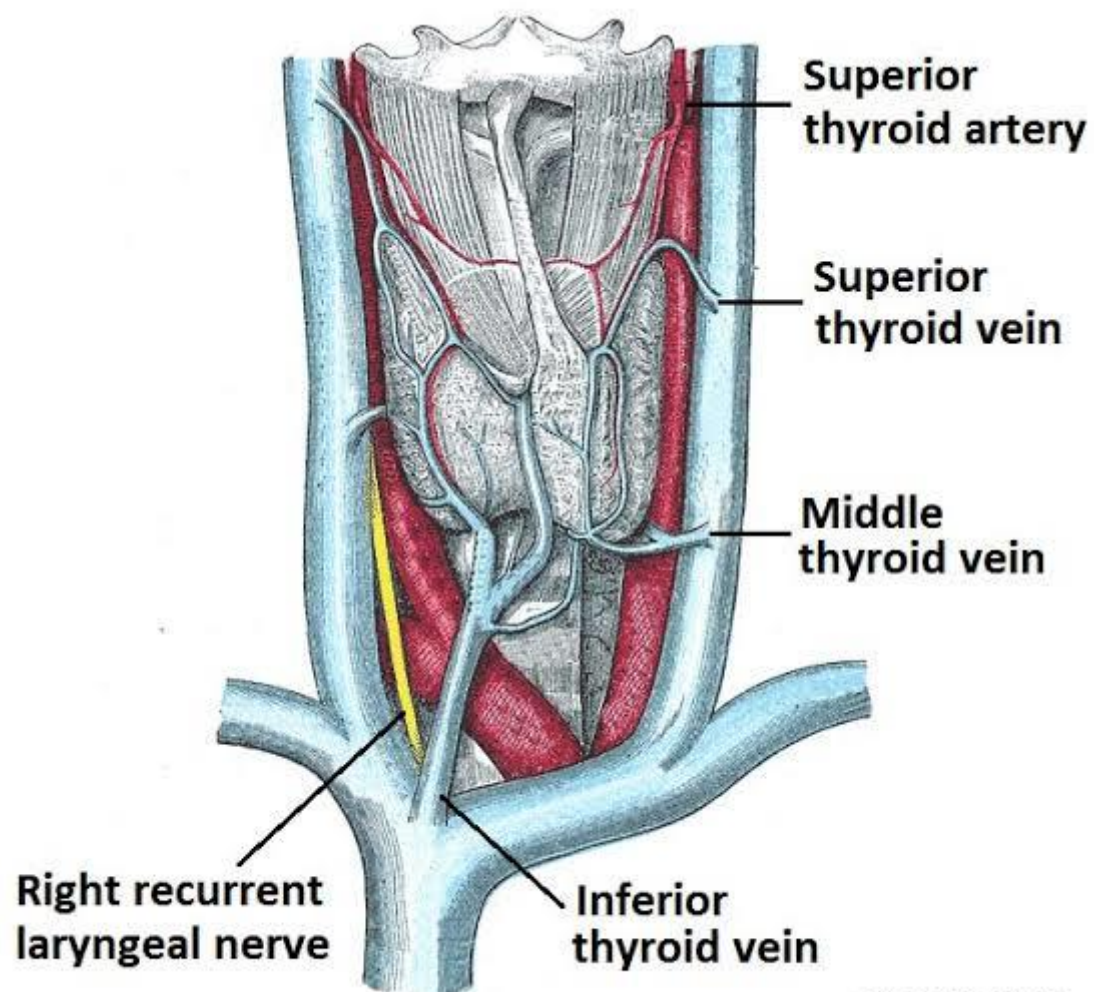


## VENOUS DRAINAGE

Superior thyroid vein- drains into internal jugular vein

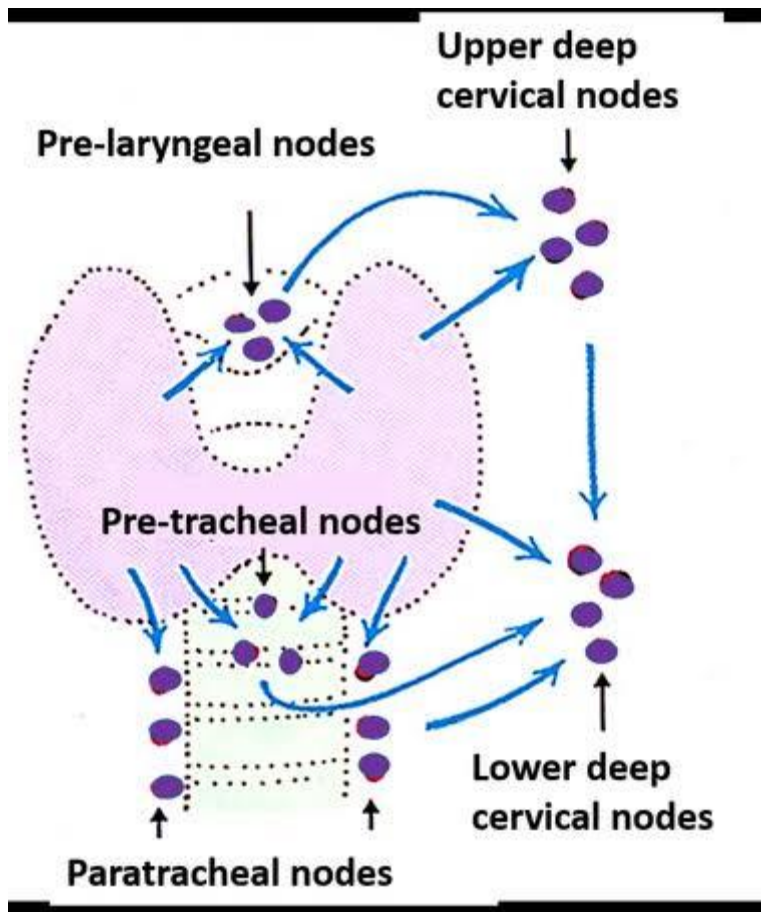
Middle thyroid vein- only in 30% individuals drains into internal jugular vein

Inferior thyroid vein- forms plexus drains into brachio cephalic vein



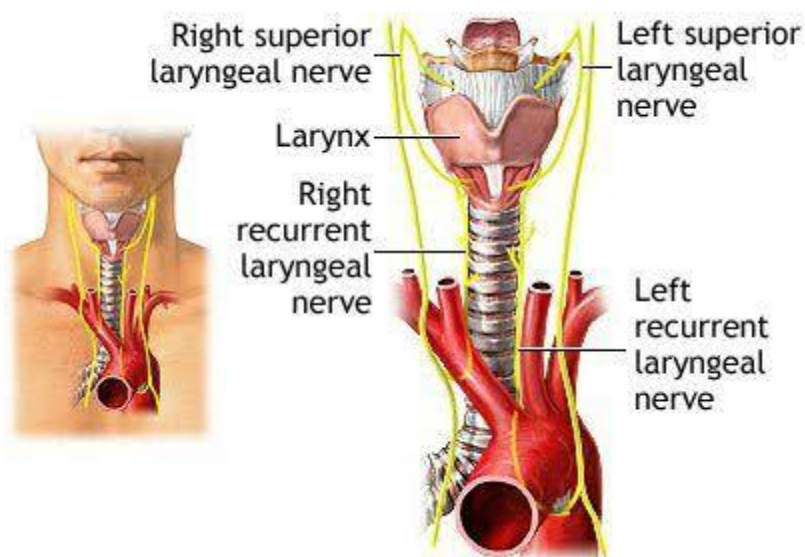
## LYMPHATIC DRAINAGE

Thyroid gland has the rich lymphatic supply within as well as around the gland. subcapsular plexus drains mainly to the central compartment namely the DELPHIAN NODES and para tracheal nodes and nodes on superior and inferior thyroid veins. From here it goes to deep cervical nodes and finally into mediastinal nodes



## NERVE SUPPLY

RLN and the thyroid gland and its close relation and vulnerability to injury makes supreme importance to the surgeon. The RLN is a branch of vagus nerve. It has two branches namely right and left. Right recurs around the subclavian and the left recurs the aortic arch right branch has less distance than left and it runs more obliquely to reach the groove. 2% of the population nerve on the right side are non recurrent. Nerve enters at the level of ligament of berry- nothing but the condensation of pre tracheal fascia that binds thyroid to trachea. The most riskm of injury to the nerve is at this point.



**IDENTIFICATION POINT OF NERVE:**

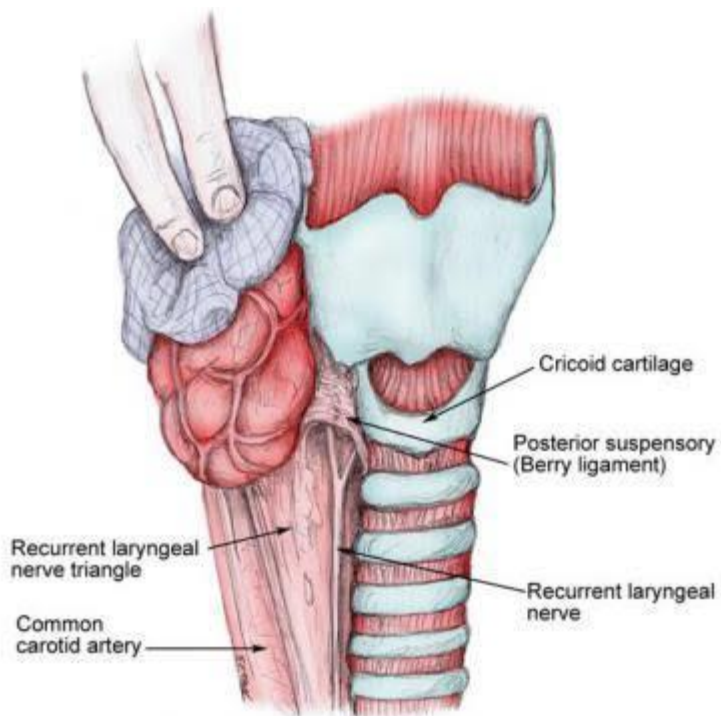
Tracheo esophageal groove

Near inferior thyroid artery

Behrs triangle

Berrys ligament

Tubercle of zuckerkandl



## **PHYSIOLOGY**

Structural and functional unit of thyroid gland is the lobule

Each lobule contains 24 to 40 follicles. the follicles are lined by cuboidal epithelium and supplied by single arteriole. The follicles contain the colloid in which thyroglobulin is stored

Hormones triiodothyronine and L- thyroxine bind to thyroglobulin

## **SYNTHESIS OF THYROID HORMONE**

STEP1-iodide trapping from the blood

STEP2-oxidation of iodide to iodine

STEP3-binding of iodine with tyrosine to form iodotyrosine

STEP4- coupling to form T3 and T4.

During metabolic need – thyroglobulin is broken down and T3 and T4 is secreted in to blood.

These hormones bind to albumin,thyroxine binding globulin,thyroxine binding pre albumin.

Physiological effects are mainly due to free form and not the protein bound one . most

physiological active hormone is T3 and its half life is few hours. T4 is slowly acting and its

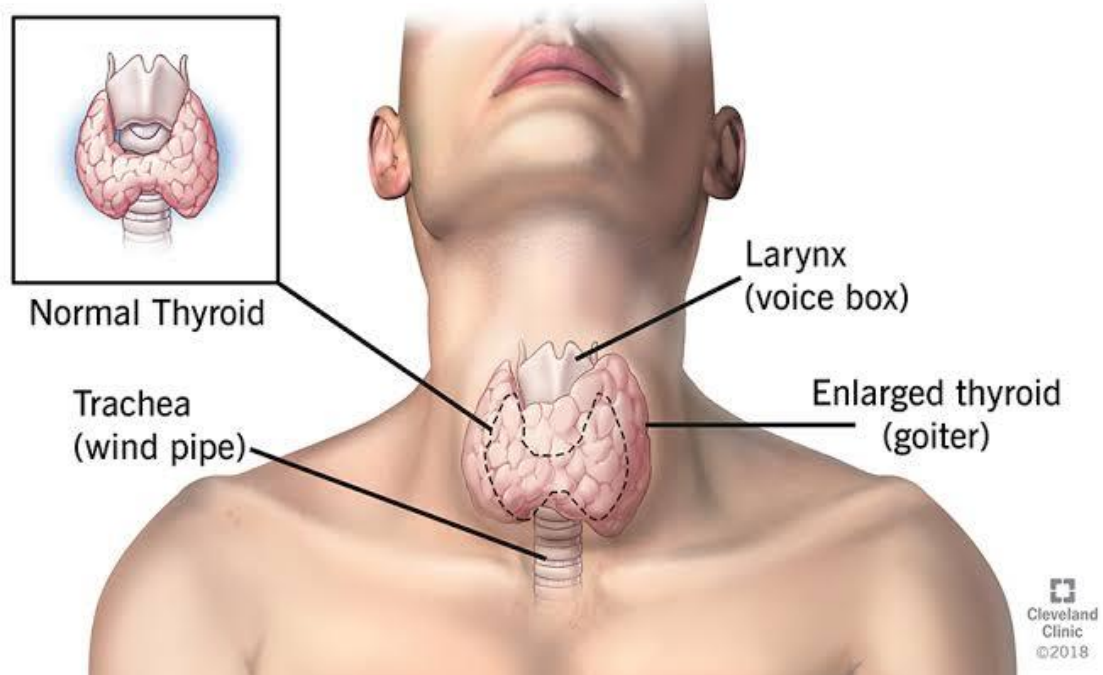
half life is 4 to 14 days.

## GOITRE

Goitre is defined as the diffuse enlargement of the gland either due benign, malignant or due to inflammatory etiology.

SOLITARY NODULE- a discrete swelling in one lobe with no palpable abnormality in other parts of the gland.

DOMINANT NODULE- discrete swelling in one lobe with palpable abnormality in other parts of the gland.



## Classification of thyroid swellings

### Tabular column

Classification of thyroid swellings		
Simple goiter	Diffuse hyperplastic	Physiological Pubertal Pregnancy
	Multinodular goiter	
Toxic	Diffuse (Graves' disease)	
	Multinodular	
	Toxic adenoma	
Neoplastic	Benign	
	Malignant	
Inflammatory	Autoimmune	Chronic lymphocytic thyroiditis
		Hashimoto's disease
	Granulomatous	De Quervain's thyroiditis
	Fibrosing	Riedel's thyroiditis
	Infective	Acute (bacterial thyroiditis, viral thyroiditis, 'subacute thyroiditis')
		Chronic (tuberculous, syphilitic)
	Other	Amyloid



## STAGES OF GOITRE FORMATION

Continuous stimulation leads to diffuse hyperplasia, so all the lobules contain active follicles and takes iodine uniformly – leads to diffuse hyperplastic goiter. This is reversible in nature. Due to the fluctuation in stimulation -areas of active and inactive lobules develops. An active lobule are highly vascular and hyperplastic in nature leads to central necrosis, along with surrounding rim of active follicles.

The above said necrotic lobules coalesce to form the nodules. Nodules filled with the iodine free colloid. It also contain new masses of inactive follicles. Continuation of the above leads to development of nodular goiter. Nodules are inactive in nature with the internodular tissue are active.

## CLINICAL FEATURES

Swelling in front and sides of the neck

Moves with the deglutition

Moves with the protrusion in case of thyroglossal cyst

Difficulty in swallowing

Difficulty in breathing

Change in voice

Pain over the swelling

Loss of appetite and weight

Presence of any other swelling

Presence of pulsatile bony swelling

## FEATURES OF HYPERTHYROIDISM

Tremors

Sweating

Tachycardia

Palpitation

Headache

Irritability

Insomnia

Mental confusion

Heat intolerance

Diarrhea

## FEATURES OF HYPOTHYROIDISM

Dry skin

Coarse hair

Anorexia

Cold intolerance

Menorrhagia

Myxedema

## COMPLICATIONS

Tracheal obstruction

Respiratory obstruction

Development of secondary thyrotoxicosis in 30% of patients

Increased incidence of follicular malignancy

Solitary nodule may harbor occult papillary carcinoma

## INDICATIONS OF SURGERY

Neoplasia – FNAC- positive

Clinical suspicion of malignancy-age, male sex, fixity, hard consistency, lymphadenopathy

Toxic adenoma

Pressure symptoms

Cosmesis

Cardiac manifestations due to secondary toxicosis

Patient wishes

## SURGERIES IN THYROID

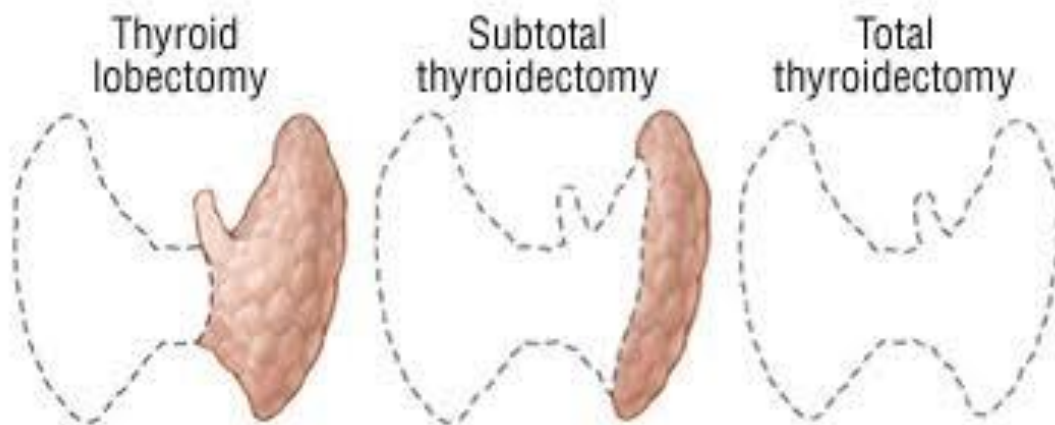
**HEMITHYROIDECTOMY:** removal of one lobe and isthmus

**SUBTOTAL THYROIDECTOMY:** removal of both lobes leaving behind 3 to 4gms in each lobe

**HARTLEY DUNHILL PROCEDURE:** removal of both lobes leaving behind 4 to 6 gms in one lobe

**NEAR TOTAL THYROIDECTOMY:** only one gram of thyroid tissue left adjacent to ligament of berry and RLN

**TOTAL THYROIDECTOMY:** Removal of all visible thyroid tissue



**THYROIDECTOMY:**

After proper assessment and evaluation and anaesthetic fitness

thyroidectomy was performed under general anaesthesia

Position- Rose position or Barking dog position

Patients head up for 30 degree and neck extended

Incision – Kocher's transverse cervical collar incision

The incision was made 1cm below cricoid cartilage. Incision deepened and flaps were raised in the subplatysmal plane superiorly up to thyroid cartilage and inferiorly up to suprasternal notch. Deep fascia is incised vertically and strap muscles are incised in midline and retracted laterally to visualize the thyroid gland, dissection proceeded close to the thyroid gland. First structure to be ligated was middle thyroid vein. This was followed by superior pedicle – superior thyroid vessels are identified skeletonized ligated and cut close to the gland to avoid injury to external laryngeal nerve. Then dissection carried out recurrent laryngeal nerve is identified at the level of cricoid cartilage. Then this was followed by inferior pedicle ligation and then capsular ligation of inferior thyroid vessels to avoid injury to parathyroid supply. RLN is more vulnerable to injury near ligament of Berry so no cautery in that area. Thyroidectomy done and after adequate hemostasis and placing of suction DT wound closed in layers.



## COMPLICATIONS

Hemorrhage – due to slipping of ligature and bleeding from muscular arteries

Respiratory obstruction-due to traumatic intubation,tension haematoma, B/L RLN paralysis

Injury to nerves – ELN>>>RLN, cervical sympathetic chain

Parathyroid insufficiency- due to vascular infarction or accidental removal

Thyroid insufficiency

Thyro toxic crisis

Wound infection

Seroma

MIVAT- minimally invasive video assisted thyroidectomy

Incision is around 1.5 to 2cm. most commonly used for lobectomy. also used for total thyroidectomy

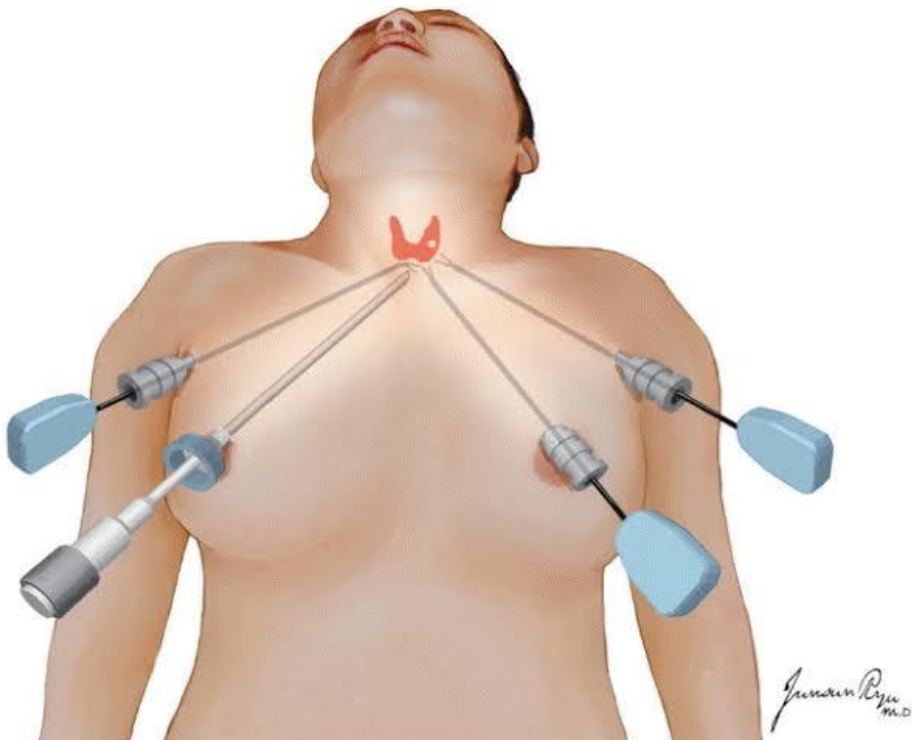
Indications:

Benign thyroid nodule <3cm in size

Papillary thyroid carcinoma < 2cm in size

Contraindications

Thyroiditis



## THYROID NEOPLASMS

### BENIGN:

1. Follicular adenoma-colloid,embryonal,fetal
2. Hurthle cell adenoma
  - colloid adenoma
  - papillary adenoma

### MALIGNANT( DUNHILL CLASSIFICATION)

1. Differentiated thyroid cancers-80%
  - Papillary carcinoma-60%
  - Follicular carcinoma-17%
  - Papillo follicular
2. Undifferentiated
  - Anaplastic-13%
  - Medullary-6%
  - Lymphoma-4%
3. Secondaries- from colon,kidney,melanoma,breast

Incidence of thyroid malignancy is 3.7/ 100000

Male to female ratio is 3:1

ETIOLOGY:

1. Irradiation
2. long standing MNG
3. familial as in medullary ca
4. Hashimotos thyroiditis
5. Cowden syndrome
6. familial

## STAGING OF THYROID TUMOURS

### PRIMARY TUMOUR

Tx – Primary Tumour cannot be Assessed

T0- No evidence of primary tumour

T1- Tumour  $\leq$  2cm or less in greatest dimension limited to thyroid

T1a tumour  $\leq$  1cm in greatest dimension limited to thyroid

T1b Tumour  $>1$ cm but  $\leq$  2cm in greatest dimension limited to thyroid

T2 Tumour  $> 2$ cm but  $\leq$  4cm in greatest dimension limited to thyroid

T3 Tumour  $> 4$ cm limited to the thyroid or gross extrathyroidal extension invading only strap muscles

T3a – Tumour  $> 4$ cm limited to thyroid

T3b- Gross extra thyroidal extension invading only strap muscles from a tumour of any size

T4- Includes gross extra thyroidal extension

T4a- Gross extrathyroidal extension invading soft tissues, larynx, trachea, esophagus or RLN from tumour of any size

T4b- Gross extrathyroidal extension invading prevertebral fascia or encasing carotid artery or mediastinal vessels from a tumour of any size

## REGIONAL LYMPH NODES

Nx- Regional lymph nodes cannot be assessed

N0- no evidence of regional lymph nodes

N0a- one or more cytologically or histologically confirmed benign lymph nodes

N0b- No radiological or clinical evidence of loco regional lymph nodes

N1- Metastasis to regional lymph node

N1a- metastasis to level 6 or level 7 lymph nodes. This can be unilateral or bilateral disease

N1b- metastasis to unilateral, bi lateral or contra lateral neck lymph nodes ( level 1,2,3,4,5) or retro pharyngeal nodes

## DISTANT METASTASIS

M0- No distant Metastasis

M1- distant Metastasis

## PAPILLARY CARCINOMA:

It is 60% common . most common in younger females. h/o childhood irradiation . it is TSH dependent tumour

Woolner classification:

1. Occult primary <1cm
2. Intra thyroidal
3. Extra thyroidal

Micro papillary means tumour < 1cm

Types:

1. Encapsulated variant- adenoma like with good prognosis
2. Diffuse sclerosing variant- seen in children,100% lymphatic spread with poor prognosis
3. Papillo follicular- good prognosis

Gross: soft, firm, hard, cystic. Solitary or multinodular

Microscopic:

1. Papillary projections- psammoma bodies seen
2. Malignant cells with orphan annie eye nuclei
3. Tall cell variant
4. Columnar variant

Spread : multicentric and mainly through lymphatics

Clinical features:

1. Soft,firm,hard or cystic swelling
2. Lymph nodes are palpable in 40% of patients
3. Only lymph nodes palpable harbouring malignancy with occult primary-  
lateral aberrant thyroid



Investigations:

1. Thyroid function tests
2. Usg neck
3. CT neck
4. FNAC of swelling
5. X ray neck
6. Indirect laryngoscopy

## Management:

Total thyroidectomy with central node dissection with suppressive dose of L-thyroxine 0.3mg life long. TSH level should be  $< 0.1$  mu/L.

If lymph nodes are involved – modified radical neck dissection type 3 should be done along with total thyroidectomy

Berry picking of lymph nodes can be done

## PROGNOSIS SCORING

### AMES SCORING:

**A**- Age  $< 40$  years has good prognosis

**M** – Distant metastasis

**E** – Extent of primary tumour

**S** – Size  $< 4$ cm has good prognosis

## AGES SCORING:

A -Age < 40 years has good prognosis

G- Grade of the tumour

E- Extent of tumour

S- size < 4cm has good prognosis

## FOLLICULAR CARCINOMA

IT constitutes 17% of all thyroid malignancies. More common in females. Arises de novo or in long standing multi nodular goiter

### Types

Non invasive

Invasive

Characteristic feature – capsular and angio invasion

### Spread

Mostly hematogenous to bone,lungs,liver. Bony metastasis has characteristic warm pulsatile swelling- most common in skull, long bones and ribs. Lymphatic spread seen in 10% of individuals

### Clinical features

Swelling which is firm,nodular in nature. Compressive symptoms such as dyspnea, dysphagia and hoarseness of voice can be seen. Berrys sign is positive.

Pulsatile bony swelling can be seen.

## Management

Total thyroidectomy with central compartment dissection. If FNAC is positive total thyroidectomy with MRND type 3 is done. Maintenance dose of L-thyroxine of dose 0.1mg OD is given life long

## Follow up

RAI scan at 6 months interval

Thyroglobulin estimation once in 3 to 6 months

MRI neck to detect relapse

## ANAPLASTIC CARCINOMA

Undifferentiated aggressive tumour. Seen in elderly females.

### Clinical features

Rapidly progressive swelling causing dysphagia, dyspnea and hoarseness of voice. Berrys sign is positive

FNAC is diagnostic

### Management

Tracheostomy and isthumusectomy for pressure symptoms

External beam radiotherapy

Adriamycin as chemotherapeutic agent

Poor prognosis – life span in weeks to months

## MEDULLARY CARCINOMA

Derived from para follicular c cells of thyroid which is derived from the ultimobronchial bodies. It is located superiorly laterally. Tumour secretes calcitonin.

Sporadic in 80% of cases . MEN association in 20% of cases. RET proto oncogene is seen in both

### Clinical features

Thyroid swelling associated with increased serum calcitonin.

Diarrhoea, amyloid stroma. Increased CEA levels is seen. Positive family history of pheochromocytoma and hyperparathyroidism is seen

Spread – most common spread is via haematogenous and most common organ involved is liver. It is TSH independent tumour

Investigation of choice is FNAC

### Management

Total thyroidectomy with central node dissection

If node is positive total thyroidectomy with MRND type 3 is done

It is associated with poor prognosis

## MATERIALS AND METHODS

### STUDY CENTRE

Institute of General surgery, Madras Medical College and Rajiv Gandhi Government General Hospital

### DURATION OF STUDY

December 2017 to January 2019

### STUDY DESIGN

PROSPECTIVE AND RETROSPECTIVE( Observational)

SAMPLE SIZE : 102



## INCLUSION CRITERIA

All patients with clinical , radiological and FNAC proven Benign thyroid disease

## EXCLUSION CRITERIA

Patients with radiological,clinical,cytological proven diagnosis of thyroid malignancy are excluded from this study

Pregnant mothers are excluded from this study

Patients not willing are excluded from this study

## ETHICS CLEARANCE :

OBTAINED

## METHODOLOGY

All patients who fit into the inclusion criteria will be observed, randomized into treatment groups and following data are collected

1. Routine blood investigations
  - CBC
  - Thyroid function test

All these will be done serially

2. USG Neck
3. X Ray chest
4. X Ray Neck AP and lateral
5. FNAC
6. Indirect Laryngoscopy

## METHODOLOGY

Patient will be evaluated with the above said investigations

Patient will be assessed for the planned procedure

Patient will be monitored

1. Pre op
2. Intra op
3. Post op

Conclusion will be based on Histo Pathological Examination

## MANAGEMENT

Patient will be posted for surgery with proper consent under general anaesthesia

Operative management

1. Total Thyroidectomy
2. Hemi Thyroidectomy

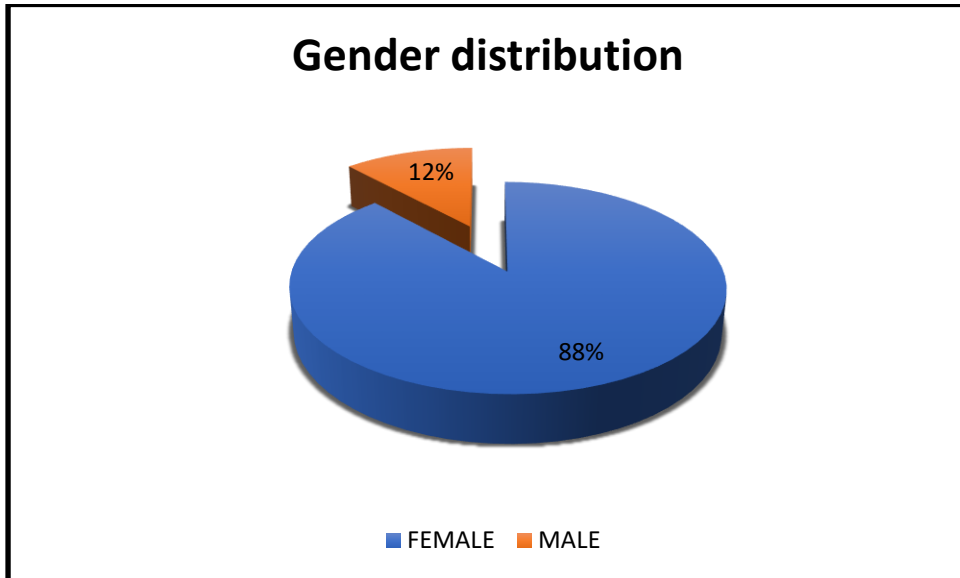
In majority of the patients plan of management was decided before. Since it was diagnosed as benign pathology either hemithyroidectomy or Total thyroidectomy was planned . if availability of frozen section and suspicion of ,malignancy was there eventhough it is benign management will be based on intra op results or else further management like completion thyroidectomy and neck dissections will be planned after histo pathological examination

## STATISTICAL ANALYSIS

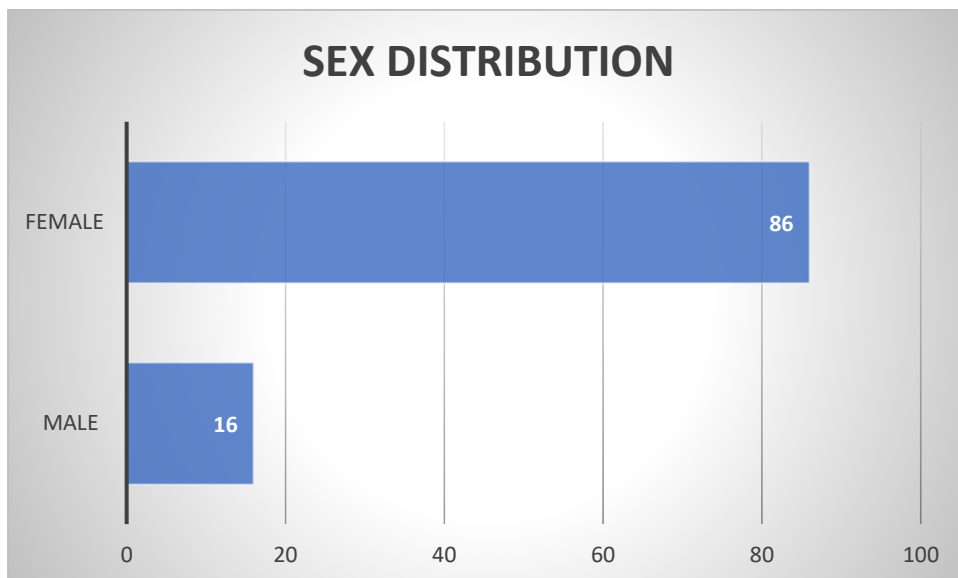
The study was conducted in Institute of general surgery, RGGGH between December 2017 to January 2019. The total study population 102 who met the inclusion criteria were included in the group

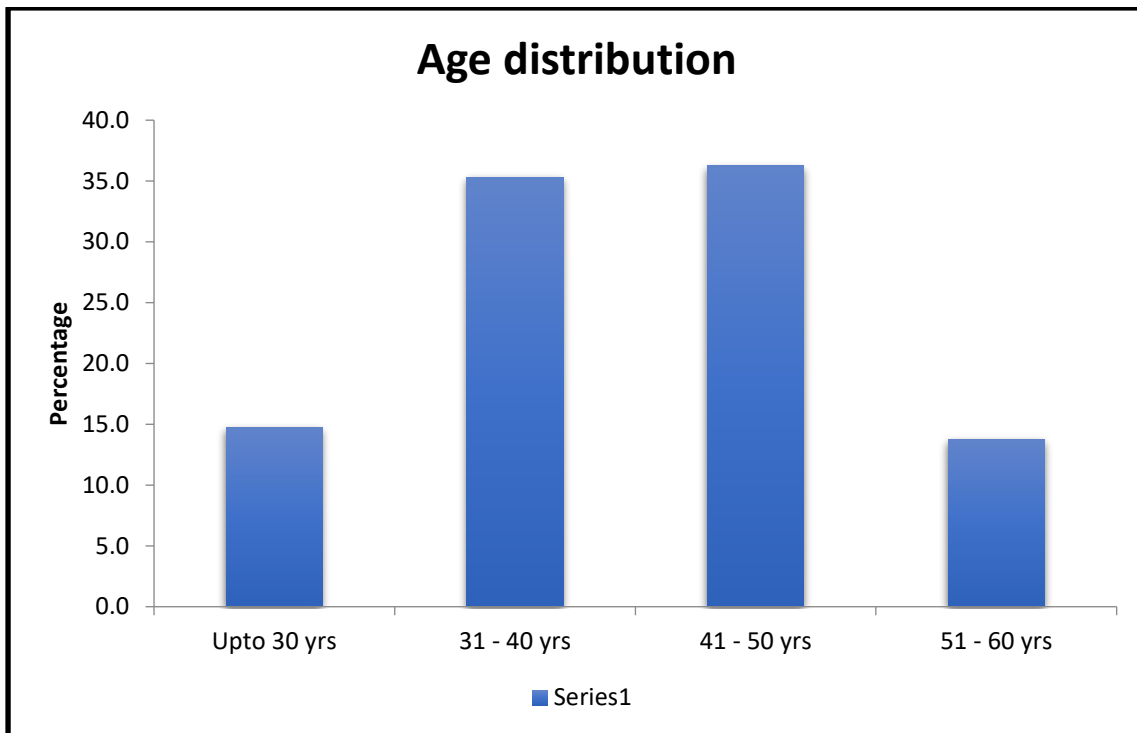
The collected data were analysed with IBM. SPSS statistics software 23.0 version .To describe about the data descriptive statistics frequency analysis, percentage analysis were used for categorical values and the mean and SD were used for continuous variables

## CHART – GENDER DISTRIBUTION



Thyroid disorders are more common in females.





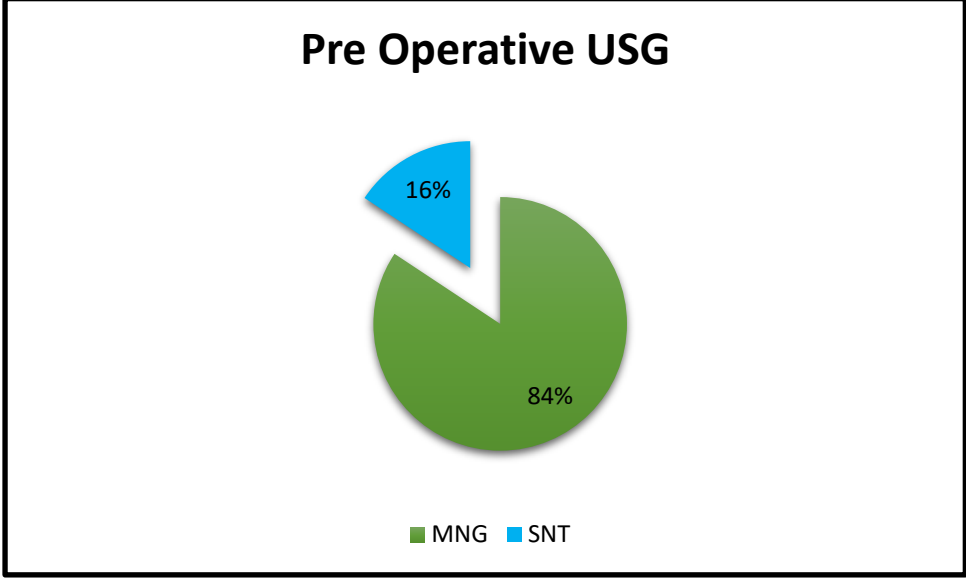
Majority of the disorders falls in the age group 35-50

## AGE DISTRIBUTION

AGE	Frequency	Percent
Upto 30 years	15	14.7
31-40 years	36	35.3
41-50 years	37	36.3
51-60 years	14	13.7
Total	102	100.0

Majority falls in the age group 35 to 50

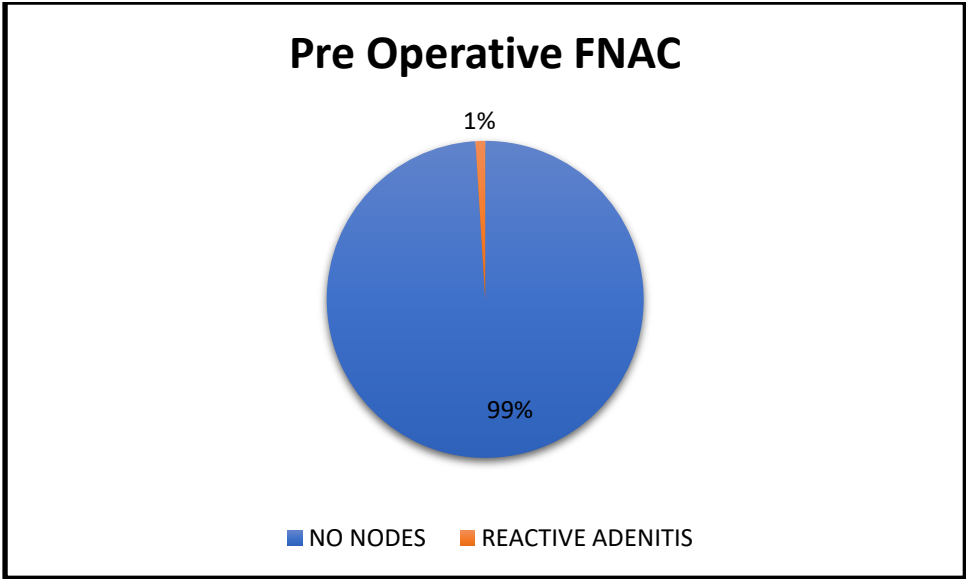




Pre op radiological diagnosis shows benign etiology

Pre op USG		Frequency	Percent
	MNG	86	84.3
	SNT	16	15.7
	Total	102	100.0

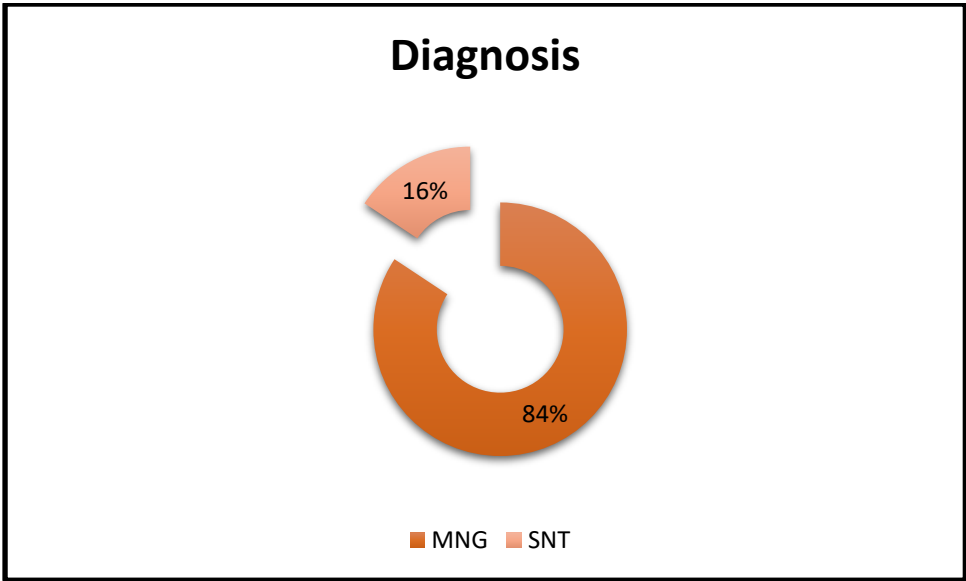
Pre op radiological diagnosis shows benign etiology



Pre op FNAC of nodes shows no evidence of malignancy

PRE OP FNAC	Frequency	Percent
NO NODES	101	99.0
REACTIVE ADENITIS	1	1.0
Total	102	100.0

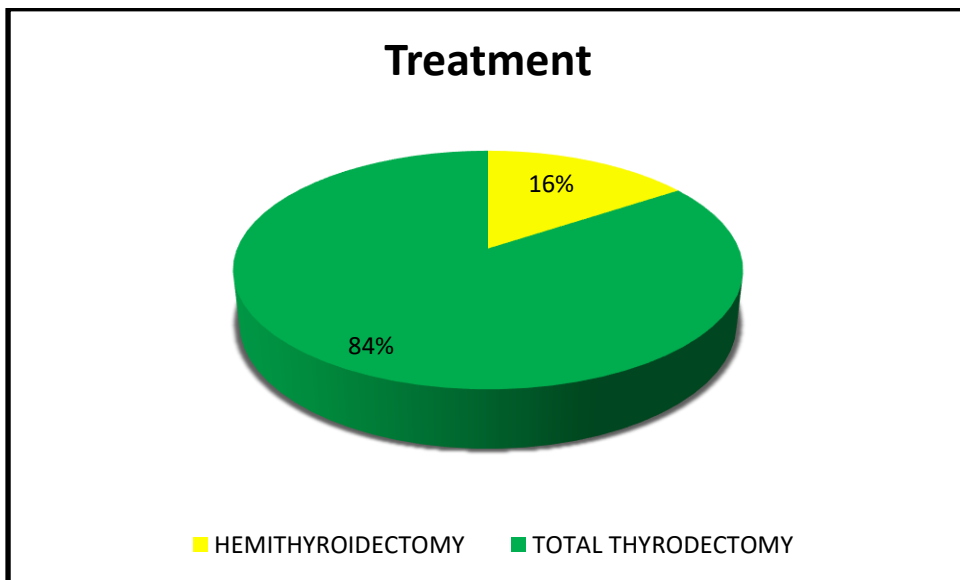
Pre op FNAC of nodes shows no evidence of malignancy



Pre op diagnosis shows 84% of MNG and 16% SNT

DIAGNOSIS	Frequency	Percent
MNG	86	84.3
SNT	16	15.7
Total	102	100.0

Pre op diagnosis shows 84% of MNG and 16% SNT



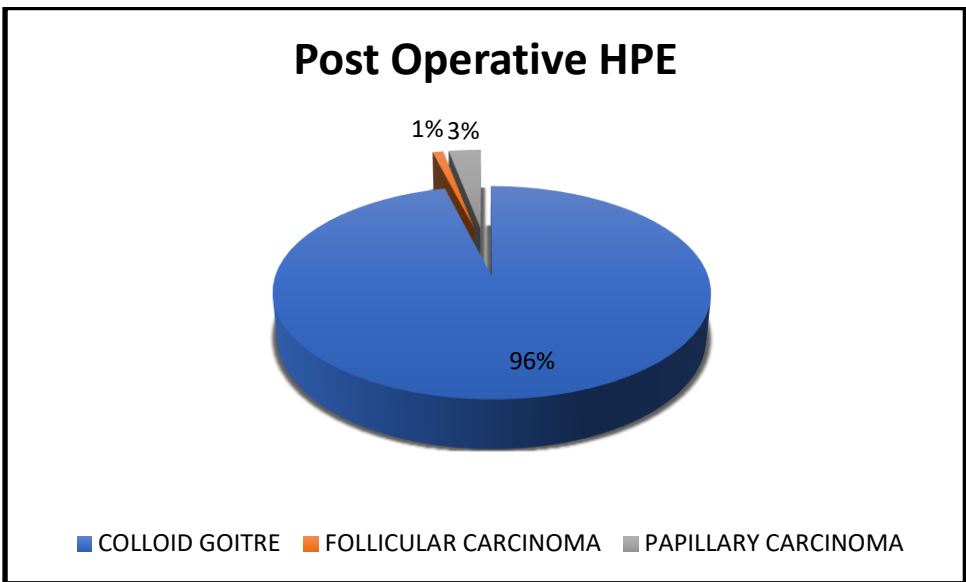
Treatment provided

16% of SNT are treated with hemithyroidectomy

84% of MNG are treated with Total thyroidectomy

TREATMENT	Frequency	Percent
HEMITHYROIDECTOMY	16	15.7
TOTAL THYROIDECTOMY	86	84.3
Total	102	100.0

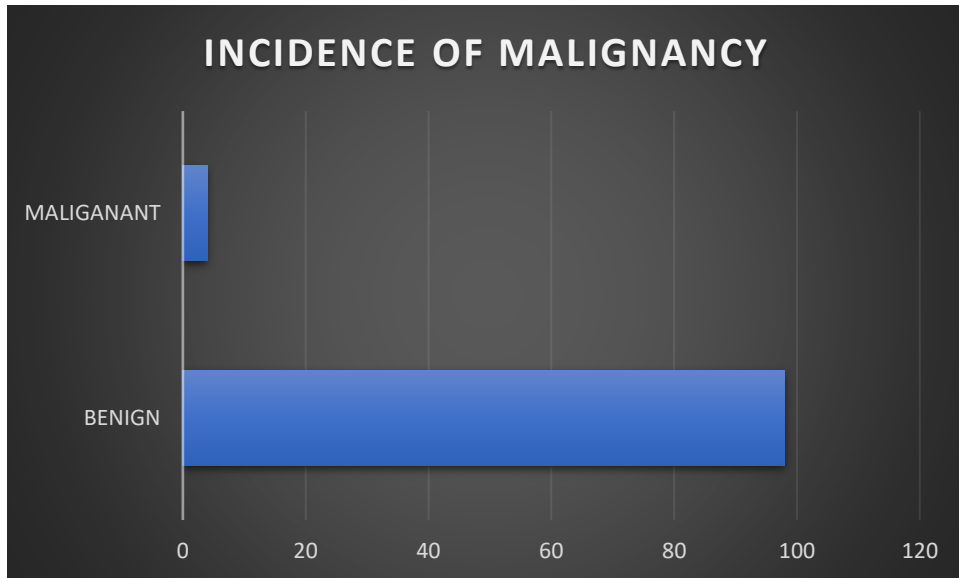




Post op HPE shows

- 1. Colloid goitre-96%
- 2. Papillary carcinoma-3%
- 3. Follicular carcinoma-1%

POST OP HPE	Frequency	Percent
COLLOID GOITRE	98	96.1
FOLLICULAR CARCINOMA	1	1.0
PAPILLARY CARCINOMA	3	2.9
Total	102	100.0



Incidence of malignancy among 102 patients is 4%

Of which papillary carcinoma accounts 3%

Follicular carcinoma accounts for 1%

## RESULTS

Prospective and retrospective study on incidental finding of thyroid malignancy done at RGGGH Chennai from December 2017 to January 2019. A total of 102 patients were observed. In that sex wise distribution shows female predominance. Majority of solitary nodule found benign pre op turned out be malignant. Similarly male goiter – suspicion of malignancy is high . malignancy female to male ratio is 3:1 worldwide. In our study ratio is 3:1. Incidence of malignancy in a sum 102 patients is 4%. With papillary carcinoma the most common malignancy harbors 3% and follicular carcinoma 1%

## CONCLUSION

Thyroid disorders are most common disorder worldwide . In that thyroid neoplasms accounts about 1.7/100000 population with female to male ratio of about 3:1. Many advanced diagnostic modalities available. Surgery remains cornerstone in the management in most of thyroid malignancy.

In our study around 102 patients are observed whose clinical presentation , radiological presentation, tissue diagnosis found to be benign pre operatively turned malignant on post operative histopathological examination with incidental finding of malignancy with percentage of 4 compared to global study in which the percentage is around 7

## BIBLIOGRAPHY

- I.Sakorafas G H, Stafyla V, Kolettis T, Tolumis G, Kassaras G, Peros G.  
Microscopic papillary thyroid cancer as an incidental finding in patients treated surgically for presumably benign thyroid disease. *J Postgrad Med* 2007;53:23-6
- Hedinger C, Williams ED (editor). Histological typing of thyroid tumors. *In* :  
WHO International Histological Classification of Tumours, Vol 11, 2nd ed. Berlin: Springer; 1988. p. 9 - 10. \_
- Sakorafas GH, Giotakis J, Stafyla V. Papillary thyroid microcarcinoma: A surgical perspective. *Cancer Treat Rev* 2005;31:423-38. \_ [\[PUBMED\]](#) [\[FULLTEXT\]](#)
- Harach HR, Franssila KO, Wasenius VM. Occult papillary carcinoma of the thyroid; A "normal" finding in Finland. A systemic autopsy study. *Cancer* 1985;56:531-8. \_
- McConahey WM, Hay ID, Woolner LB, van Heerden JA, Taylor WF. Papillary thyroid cancer treated at the Mayo Clinic, 1946 through 1970: Initial manifestation, pathologic findings, therapy and outcome. *Mayo Clin Proc* 1986;61:978-96. \_ [\[PUBMED\]](#)
- Fink A, Tomlinson G, Freeman JL, Rosen IB, Asa SL. Occult micropapillary carcinoma associated with benign follicular thyroid disease and unrelated thyroid neoplasms. *Mod Pathol* 1996;9: 816-20. \_ [\[PUBMED\]](#)

**PROFORMA**

Name:

IP Number:

Age/Sex:

HOPI

Duration of swelling:

Presenting complaints other than swelling:

Past treatment history and its duration:

Family history:

Examination of neck:

Side of the swelling

Site of the swelling

Any other co existent swellings

Thyroid Function Test:

TSH

Free T3

Free T4

Ultrasonogram findings:

Pre op Tissue diagnosis:

Intra Operative Frozen section:

Type of surgery done:

Post Operative HPE:

## **INFORMATION SHEET**

- **TITLE: "A STUDY ON INCIDENTAL FINDING OF THYROID MALIGNANCY IN A PATIENT TREATED FOR BENIGN THYROID DISEASE "**

**Name of Investigator:** Dr.I.ARUN PRAKASH

**Name of Participant:**

**Purpose of Research:** To study prevalence of malignancy in a patient treated for benign disease

**Study Design:** Prospective& retrospective Observational Study

**Study Procedures:** Patient will be subjected to routine investigations, XRAY Neck, FNAC, Vocal cord Examination , USG, TFT,complete hemogram, operative procedure as indicated, post operative HPEand the data analysed.

**Possible Risks:** No risks to the patient

**Possible benefits**

**To patient :** A better understanding of their problem so has to devise a plan of management which suits their needs.

**To doctor & to other people:** If this study gives positive results, it can help determine the role of Manheim Peritonitis Index in the treatment of patients with peritonitis. This will help in providing better and complete treatment to other patients in future.

**Confidentiality of the information obtained from you:** The privacy of the patients in the research will be maintained throughout the study. In the event of any publication or



presentation resulting from the research, no personally identifiable information will be shared

**Can you decide to stop participating in the study:** Taking part in this study is voluntary. You are free to decide whether to participate in this study or to withdraw at any time

**How will your decision to not participate in the study affect you:** Your decision will not result in any loss of benefits to which you are otherwise entitled.

Signature of Investigator

Signature of Participant

Date :

Place :

## PATIENT CONSENT FORM

Study Detail : **“A STUDY ON INCIDENTAL FINDING OF THYROID MALIGNANCY IN BENIGN THYROID DISEASE”**

Study Centre : Rajiv Gandhi Government General Hospital, Chennai.

Patient's Name :

Patient's Age :

In Patient Number :

Patient may check () these boxes

I confirm that I have understood the purpose of procedure for the above study. I have the opportunity to ask question and all my questions and doubts have been answered to my complete satisfaction.

I understand that my participation in the study is voluntary and that I am free to withdraw at any time without giving reason, without my legal rights being affected.

I understand that sponsor of the clinical study, others working on the sponsor's behalf, the Ethics committee and the regulatory authorities will not need my permission to look at my health records, both in respect of current study and any further research that may be conducted in relation to it, even if I withdraw from the study I agree to this access. However, I understand that my identity will not be revealed in any information released to third parties or published, unless as required under the law. I agree not to restrict the use of any data or results that arise from this study.

I agree to take part in the above study and to comply with the instructions given during the study and faithfully cooperate with the study team and to immediately inform the study staff if I suffer from any deterioration in my health or well being or any unexpected or unusual symptoms.

I hereby consent to participate in this study

I hereby give permission to undergo complete clinical examination and diagnostic tests including hematological, biochemical, radiological tests and to undergo treatment

Signature/thumb impression

Patient's Name and Address

## **CERTIFICATE – II**

This is to certify that this dissertation work titled **“A STUDY ON INCIDENTAL FINDING OF THYROID MALIGNANCY IN A BENIGN THYROID DISEASE”** of the candidate **Dr. I. ARUN PRAKASH** with registration Number 221711002 for the award of **M.S degree** in the branch of **General Surgery**. I personally verified the urkund.com website for the purpose of plagiarism Check. I found that the uploaded thesis file contains from introduction to conclusion pages and result shows 14% percentage of plagiarism in the dissertation.

**Guide & supervisor sign with seal.**

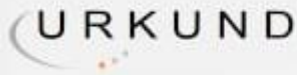
MASTER CHART

PATIENT	AGE	SEX	PRE-OP USG	PRE-OP FNAC - THYROID	PRE-OP FNAC NODE	DIAGNOSIS	TREATMENT	POST OP HPE
1	35	FEMALE	SNT	COLLOID GOITRE	NO NODES	SNT	HEMITHYROIDECTOMY	COLLOID GOITRE
2	46	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
3	28	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
4	52	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
5	44	MALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
6	56	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
7	30	FEMALE	SNT	COLLOID GOITRE	NO NODES	SNT	HEMITHYROIDECTOMY	COLLOID GOITRE
8	38	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
9	46	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
10	32	MALE	SNT	COLLOID GOITRE	NO NODES	SNT	HEMITHYROIDECTOMY	COLLOID GOITRE
11	43	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
12	53	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
13	45	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
14	23	FEMALE	SNT	COLLOID GOITRE	NO NODES	SNT	HEMITHYROIDECTOMY	COLLOID GOITRE
15	35	MALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
16	54	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
17	45	MALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
18	39	FEMALE	SNT	COLLOID GOITRE	NO NODES	SNT	HEMITHYROIDECTOMY	COLLOID GOITRE
19	44	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
20	40	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
21	33	FEMALE	SNT	COLLOID GOITRE	REACTIVE ADENITIS	SNT	HEMITHYROIDECTOMY	PAPILLARY CARCINOM
22	57	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
23	43	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
24	36	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
25	38	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
26	48	MALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
27	49	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
28	49	FEMALE	MNG	COLLOID GOITRE	NO NODES	SNT	HEMITHYROIDECTOMY	COLLOID GOITRE
29	33	MALE	SNT	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
30	44	MALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
31	56	FEMALE	MNG	COLLOID GOITRE	NO NODES	SNT	HEMITHYROIDECTOMY	COLLOID GOITRE
32	37	FEMALE	SNT	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
33	44	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
34	46	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE

34	54	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
35	28	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
36	45	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
37	28	MALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
38	36	FEMALE	SNT	COLLOID GOITRE	NO NODES	SNT	HEMITHYROIDECTOMY	COLLOID GOITRE
39	46	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
40	37	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
41	38	FEMALE	SNT	COLLOID GOITRE	NO NODES	SNT	HEMITHYROIDECTOMY	COLLOID GOITRE
42	49	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
43	48	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
44	58	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
45	56	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
46	42	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
47	53	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
48	28	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
49	37	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
50	28	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
51	46	FEMALE	SNT	COLLOID GOITRE	NO NODES	SNT	HEMITHYROIDECTOMY	COLLOID GOITRE
52	33	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
53	35	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
54	45	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
55	53	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
56	36	FEMALE	SNT	COLLOID GOITRE	NO NODES	SNT	HEMITHYROIDECTOMY	COLLOID GOITRE
57	31	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
58	42	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
59	36	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
60	39	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
61	50	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	FOLLICULAR CARCINOMA
62	29	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
63	39	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
64	27	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
65	59	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
66	43	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
67	47	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
68	49	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
69	51	MALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
70	26	FEMALE	SNT	COLLOID GOITRE	NO NODES	SNT	HEMITHYROIDECTOMY	COLLOID GOITRE

70	26	FEMALE	SNT	COLLOID GOITRE	NO NODES	SNT	HEMITHYROIDECTOMY	COLLOID GOITRE
71	38	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
72	36	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
73	31	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
74	53	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
75	37	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
76	44	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
77	42	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
78	39	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
79	43	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
80	41	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
81	28	MALE	SNT	COLLOID GOITRE	NO NODES	SNT	HEMITHYROIDECTOMY	PAPILLARY CARCINOMA
82	39	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
83	48	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
84	34	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
85	48	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
86	29	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
87	32	FEMALE	SNT	COLLOID GOITRE	NO NODES	SNT	HEMITHYROIDECTOMY	COLLOID GOITRE
88	42	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
89	45	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
90	42	MALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
91	39	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
92	49	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
93	34	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
94	26	FEMALE	SNT	COLLOID GOITRE	NO NODES	SNT	HEMITHYROIDECTOMY	COLLOID GOITRE
95	39	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
96	43	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
97	34	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
98	44	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
99	39	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	PAPILLARY CARCINOMA
100	29	MALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
101	31	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE
102	29	FEMALE	MNG	COLLOID GOITRE	NO NODES	MNG	TOTAL THYROIDECTOMY	COLLOID GOITRE

## URKUND ANALYSIS CERTIFICATE



### Urkund Analysis Result

**Analysed Document:** DR.I.ARUN PRAKASH.docx (D57403068)  
**Submitted:** 22/10/2019 00:04:00  
**Submitted By:** dr.arunprakash89@gmail.com  
**Significance:** 14 %

#### Sources included in the report:

A FOLLOW UP STUDY BY FINE NEEDLE ASPIRATION CYTOLOGY IN SOLITARY NODULAR GOITRE  
IN GVMCH.doc (D31263693)  
FOR PLAGIARISM 2.docx (D42439315)  
thesis plaglarism.docx (D57296885)  
edited final copy.docx (D42408398)  
A COMPREHENSIVE STUDY OF THYROID MALIGNANCIES IN PATIENTS UNDERGOING SURGERY  
FOR BENIGN THYROID DISEASE.docx (D42473721)  
DEEPAK EDITED THESIS.docx (D57275341)  
final thesis.pdf (D33921506)  
<https://go.gale.com/ps/i.do?id=GALE%7CA493246177&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=09730354&p=HRCA&sw=w>  
<https://www.slideshare.net/brijeshlahri/thyroid-gland123>  
<https://slideplayer.com/slide/12730807/>

#### Instances where selected sources appear:

13

[Urkund] 16% similarity - dr  
.arunprakash89@gmail.com



 Inbox



report@analysis.urk... 03:39

 to me ▾



Document sent by: [dr.arunprakash89@gmail.com](mailto:dr.arunprakash89@gmail.com)  
Document received: 10/22/2019 12:04:00 AM  
Report generated 10/22/2019 12:09:22 AM by  
Urkund's system for automatic control.

Student message:

---

Document : DR.I.ARUN PRAKASH.docx [D57403068]

About 16% of this document consists of text similar to text found in 84 sources. The largest marking is 52 words long and is 88% similar to its primary source.

PLEASE NOTE that the above figures do not automatically mean that there is plagiarism in the document. There may be good reasons as to why parts of a text also appear in other sources. For a reasonable suspicion of academic dishonesty to present itself, the analysis, possibly found sources and the original document need to be examined closely.

Click here to open the analysis:

<https://secure.urkund.com/view/55809278-206200-915277>



# CERTIFICATE OF APPROVAL

INSTITUTIONAL ETHICS COMMITTEE  
MADRAS MEDICAL COLLEGE, CHENNAI 600 003  
EC Reg.No.ECR/270/inst./TN/2013  
Telephone No.044 25305301  
Fax: 011 25363970

## CERTIFICATE OF APPROVAL

To  
Dr.I. Arun Prakash  
Post Graduate in MS General Surgery  
Institute of General Surgery  
MMC/ Chennai

Dear Dr. I. Arun Prakash,

The Institutional Ethics Committee has considered your request and approved

Your study titled "A STUDY ON INCIDENTAL FINDING OF THYROID MALIGNANCY  
IN BENIGN THYROID DISEASE"- NO.18122017

The following members of Ethics committee were present in the meeting hold

On 12.12.2017 conducted at madras medical college, Chennai 3

- |  |                     |
|--|---------------------|
| 1. Prof.P.V jayashankar  | :Chairperson        |
| 2. Prof.R.Narayana Babu,MD.,DCH., Dean,MMC,Ch-3                        | :Deputy Chairperson |
| 3. Prof.sudha Seshayyan,MD., Vice Principal,MMC,Ch-3                   | :Member Secretary   |
| 4. Prof.N.Gopalakrishnan,MD,Director,Inst.of Nephrology,MMC,Ch         | :Member             |
| 5. Prof.S.Mayilvahanan,MD,Director,Inst. Of Int.Med,MMC, Ch-3          | :Member             |
| 6. Prof.A.Pandiya Raj,Director, Inst. Of Gen.Surgery,MMC               | :Member             |
| 7. Prof.Shanthy Gunasingh, Director, Inst.of Social Obstetrics,KGH     | :Member             |
| 8. Prof.Remma Chandramohan,Prof.of Paediatrics,ICH,Chennai             | :Member             |
| 9. Prof. Susila, Director, Inst. of Pharmacology,MMC,Ch-3              | :Member             |
| 10. Prof.K.ramadevi,MD., Director, Inst. of Bio-Chemistry,MMC,Ch-3     | :Member             |
| 11. Prof.Bharathi Vidya Jayanthi,Director, Inst. of Pathology,MMC,Ch-3 | :Member             |
| 12. Thiru S.Govindasamy, BA.,BL,High Court,Chennai                     | :Lawyer             |
| 13. Tmt.Arnold Saulina, MA.,MSW.,                                      | :Social Scientist   |
| 14. Thiru K.Ranjith, Ch-91   | : Lay person        |

We approve the proposal to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the  
Progress of the study and SAE occurring in the course of the study , any changes,  
In the protocol and patients information/informed consent and asks to be  
Provided a copy of the final report

Member Secretary - Ethics Committee