

# THYROID MALIGNANCY

## PAPILLARY THYROID CA (M/C)

→ Responsible for 70-80% Thyroid malignancies

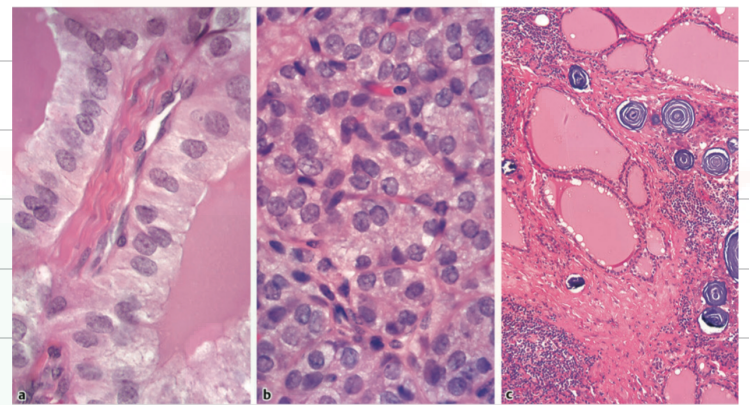
→ F > M

→ 20-40 yrs

→ M/C Gene mutation :- BRAF

→ Risk factors :-

- 1) Radiation
- 2) TG cyst
- 3) Hashimoto's thyroiditis

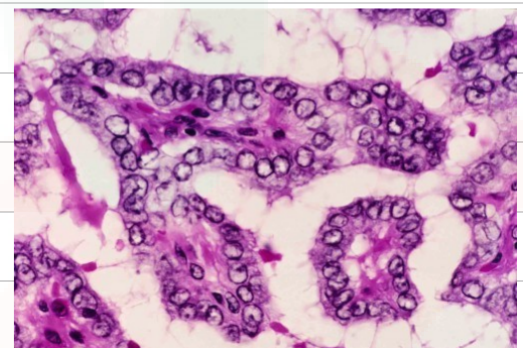


Papillary Projections

Psammoma Bodies

→ Microscopy :-

- 1) Papillary Projections
- 2) orphan annie eye nuclei
- 3) Psammoma bodies
- 4) Non-encapsulated
- 5) Multifocal



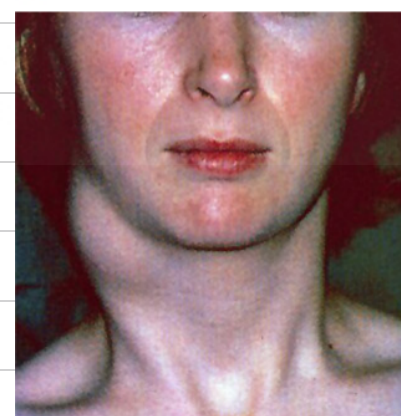
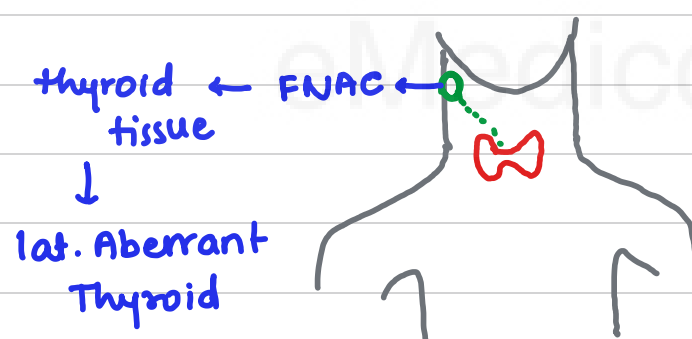
orphan annie eye nuclei

→ M/C Route of Spread :- lymphatic

→ Cf :-

- 1) Euthyroid
- 2) Thyroid nodule
- 3) lateral aberrant thyroid

(LN metastasis from occult Papillary thyroid cancer)



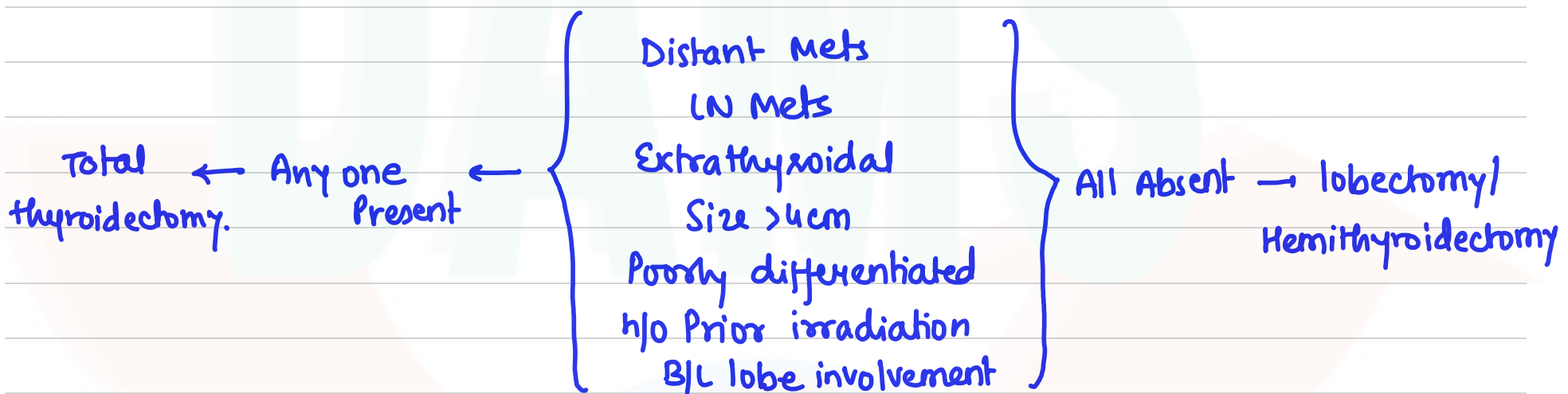
→ Investigations :-

- 1) FNAC
- 2) USA Neck
- 3) CT/MRI = if Extrathyroidal extension

→ Tumor Markers :- Sr. Tg

→  $\textcircled{P_k}$  : \* Tumor  $< 1.0 \text{ cm}$  & no Concerning LN → Active Surveillance  
 ↳ lobectomy / Hemithyroidectomy.

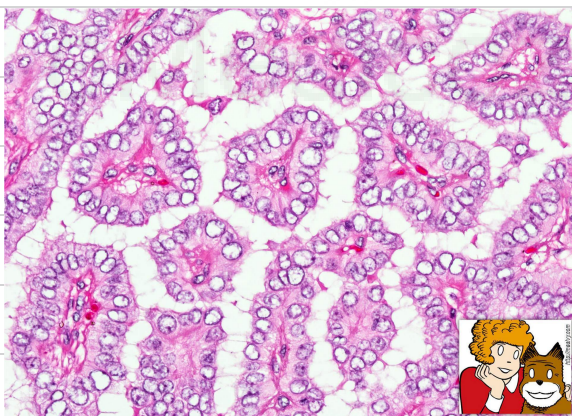
\* Tumor  $> 1.0 \text{ cm}$   $\textcircled{\text{or}}$   $< 1.0 \text{ cm}$  with Concerning LN → Total thyroidectomy  
 ↳ lobectomy / Hemithyroidectomy



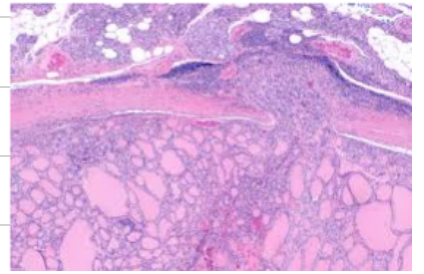
\* If LN mets +ve → Remove level VI + VII + MRND

If LN mets -ve → follow up

→ Best Prognosis Among thyroid Malignancies.



## FOLLICULAR THYROID CA



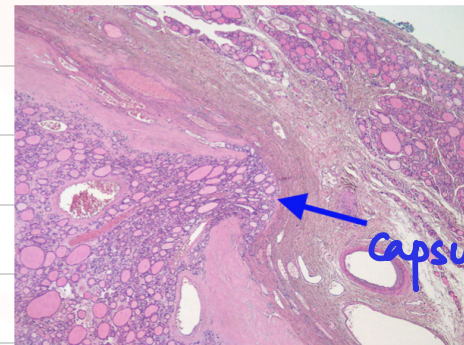
→ 2<sup>nd</sup> M/C (15-20% of thyroid malignancies)

→ F > M

→ 40-60 yr

→ M/C Gene = RAS

→ RF :- 1) Multinodular Goitre  
2) I<sub>2</sub> deficiency



Capsular invasion

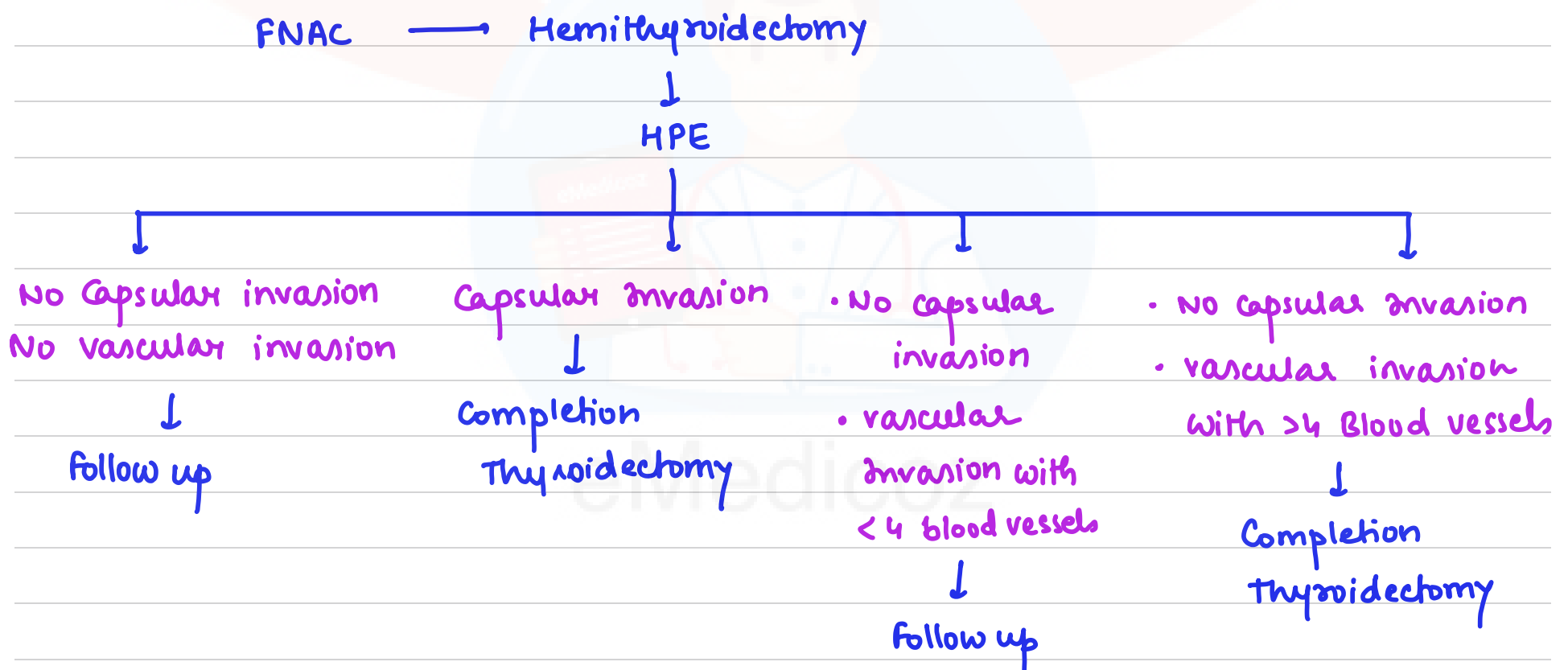
→ Encapsulated.

→ Spread :- • M/C = Hematogenous

↳ bone = osteolytic Pulsatile Bony Mets



→ Investigations :- 1) FNAC → Can't differentiate b/w F. adenoma & F. Carcinoma  
2) USG  
3) Sr. Tg (Tumor marker)



→ After FNAC

↓

Total thyroidectomy (if :- 1) Pt. choice  
2) Distant Mets  
3) LN Mets.)

→ If LN +nt = Remove level VI + VII + MRND

If LN -nt = Follow up

## HURTHLE CELL CA

→ 3% of thyroid malignancies

→ Variant of FTC (follicular thyroid Ca)

→ FNAC :- Oxyphillic / oncocytic cells

↳ Contains abundant Mitochondria.

→ Investigations & Rx :- Same as FTC.

## ANAPLASTIC THYROID CA

→ 1-2%.

→ M = F

→ 60-80 yr

→ M/c Gene : p53

→ M/c malignant endocrine tumor

→ Mortality = 98-100%.

→ Median survival = 5 months.

→ M/c Route of spread = local

→ Investigation = FNAC

→ (Rx) : If operable :- Total thyroidectomy + level VI/VII  $\pm$  MRND

Inoperable (mostly) :- Palliative

- Chemotherapy
- EBRT
- Surgery (isthmectomy)

## MEDULLARY THYROID CA

→ 3-5 %

→ F > M

→ 30-50 yr

→ Mlc Gene = p53

→ Arise from parafollicular C-cells

→ Neuroendocrine tumor

→ 75% Sporadic

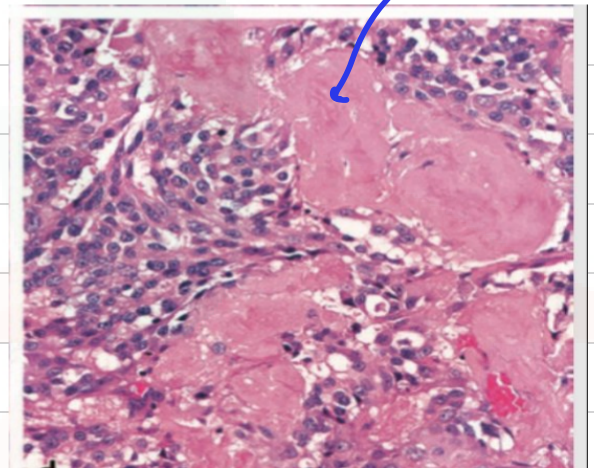
25% familial

→ Syndromes associated :-

1) MEN 2A

2) MEN 2B

3) FMTC Syndrome

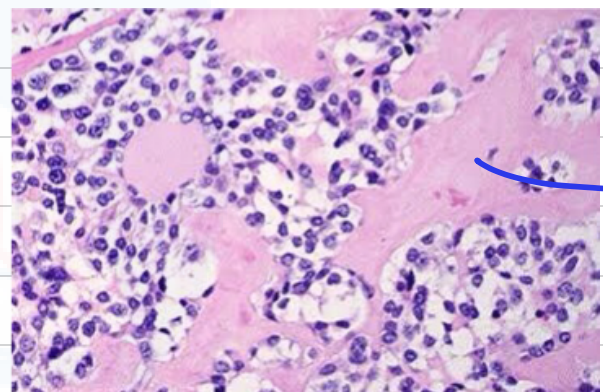


→ Spread :- Mlc = lymphatic

→ Cf :- 1) Thyroid nodule

2) Diarrhea, Sweating, Flushing

→ FNAC :- Amyloid stroma



→ Tumor marker :- 1) Sr. Calcitonin (more sensitive)

2) Sr. CEA (better for prognosis)

→ (Rx) : Rule out pheochromocytoma

↓

Total thyroidectomy + level VI/VII  $\pm$  MRND

## LYMPHOMA

- $<1\%$
- very Rare
- Rapid growth
- Non-Hodgkins B-type (Diffuse large B-cell lymphoma)
- Risk factor : Hashimoto thyroiditis
- (Rx) : R-CHOP chemo
  - Rituximab
  - cyclophosphamide
  - Hydroxydaunorubicin
  - oncovin
  - Prednisolone
- Surgery if :
  - 1) Compressive Symptoms
  - 2) Residual disease

## TNM STAGING

$T_1 = \leq 2\text{cm}$   
 $T_2 = >2 - 4\text{cm}$   
 $T_{3a} = >4\text{cm}$  } limited to thyroid

$T_{3b} =$  invasion of Strap muscles of neck

$T_{4a} =$  invasion of Subcutaneous tissue, trachea, Esophagus, RLV

$T_{4b} =$  invasion of Prevertebral fascia, Carotid vessels, Mediastinal vessels

$N_0 =$  No LN Mets

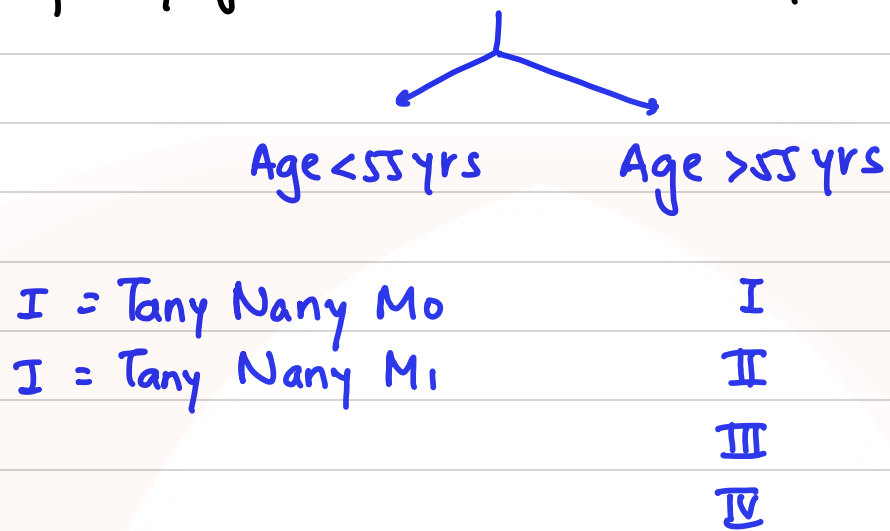
$N_{1a} = \text{VI/VII}$

$N_{1b} = \text{I-V}$

$M_0 =$  No distant mets

$M_1 =$  distant mets

→ Staging : Papillary / follicular / Hurthle cell thyroid Ca (Differentiated thyroid Ca) (DTC)



Anaplastic thyroid Ca = Stage IV (All are stage IV)

## POST-OP EVALUATION IN DTC

DTC = Differentiated thyroid Ca

→ TSH Suppression

Goal TSH in high Risk Cases :  $< 0.1$   
in low Risk Cases :  $< 0.5$

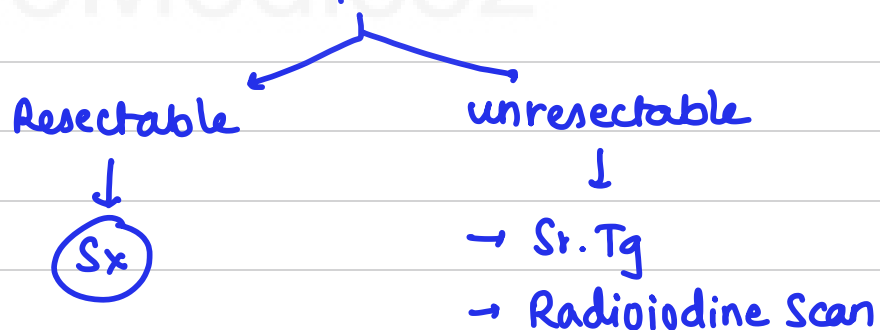
→ if no Gross Residual disease

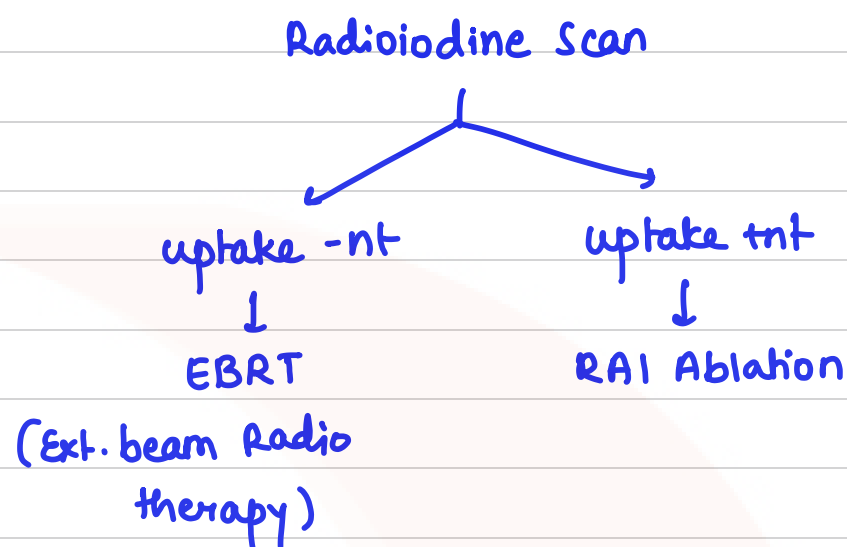
↪ dose = 30-100 mci

↳ Consider post-op RAI if :-

- 1) Gross Extrathyroidal Extension
- 2) Tumor  $> 4\text{cm}$
- 3) Post op Tg  $> 10\text{ ng/dl}$
- 4) Bulky or  $> 5$  LNs +ve.

→ Gross Residual disease in Neck : CT/MRI





→ if there is persistent Disease not amenable to RAI ablation :- **Systemic therapy**

- lenvatinib
- sorafenib
- Pembrolizumab

Note) In medullary thyroid Ca : No Role of

- 1) Radioiodine Scan
- 2) RAI Ablation

↳ if Residual / Recurrent disease :-

- 1) Surgery
- 2) EBRT
- 3) Systemic therapy (carbozanitinib)

## PROGNOSTIC FACTORS IN DTC

### AGES

- Age
- Grade
- Extrathyroidal extension

### AMES

- Age
- Mets
- Extrathyroidal Extension

### MACIS

- Post op score
- Mets
  - Age
  - Completeness of Sx
  - Invasiveness
  - Size

### GAMES

- Grade
- Age
- Mets
- Extrathyroidal Extension
- Size