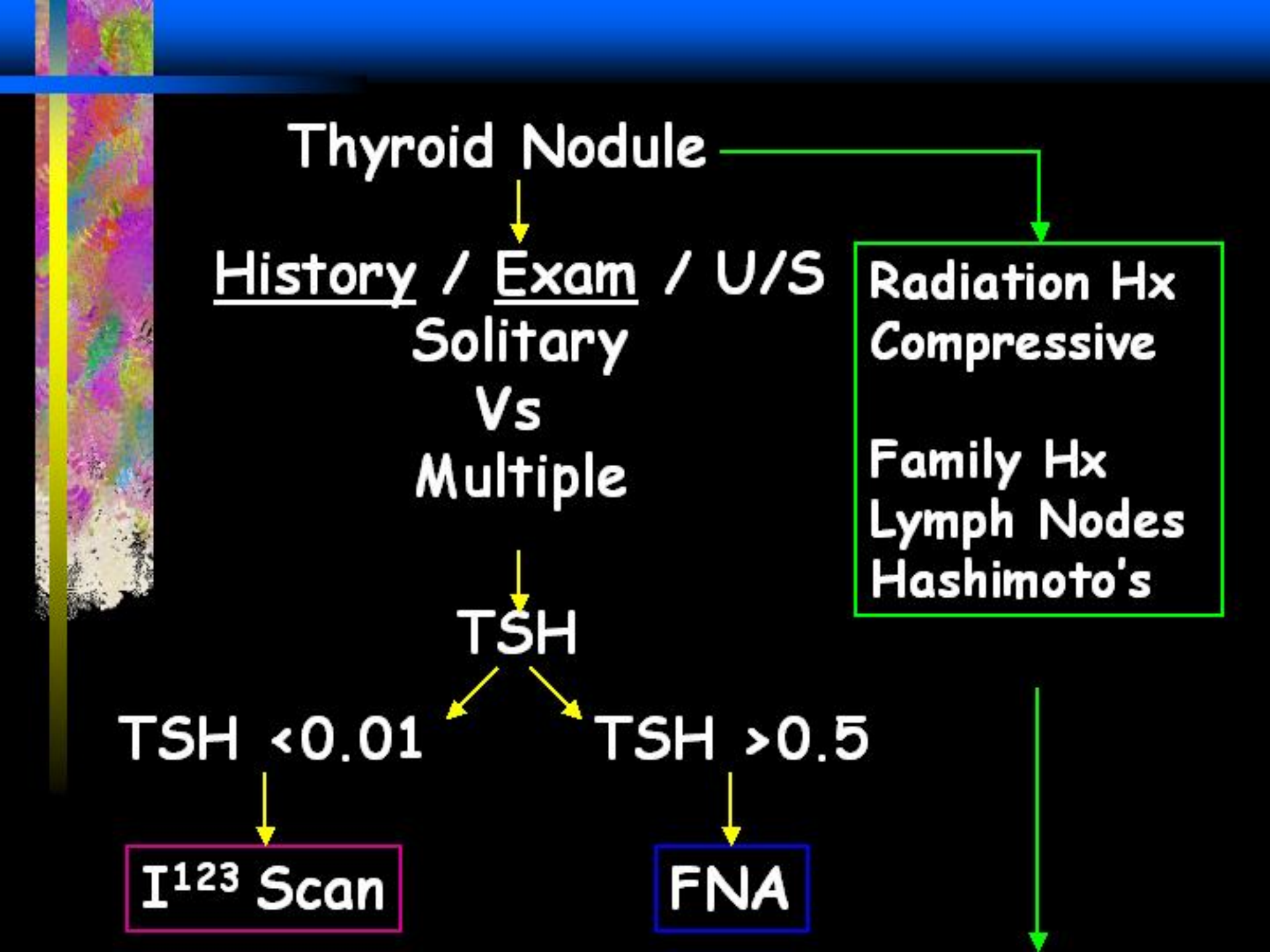
Workup of the Thyroid Nodule

Janice L. Pasieka MD FRCSC FACS
Clinical Professor of Surgery and Oncology

DIVISION OF GENERAL SURGERY
Endocrine Surgery

Objectives

- algorithm to the thyroid nodule
- FNA
  - what can it tell us
  - what to do with the results
- operative strategies


Thyroid Nodule
History / Exam / U/S
Solitary
Vs
Multiple
Radiation Hx
Compressive
Family Hx
Lymph Nodes
Hashimoto's
TSH
TSH <0.01
TSH >0.5
I123 Scan
FNA

TSH <0.01

I^{123} Scan

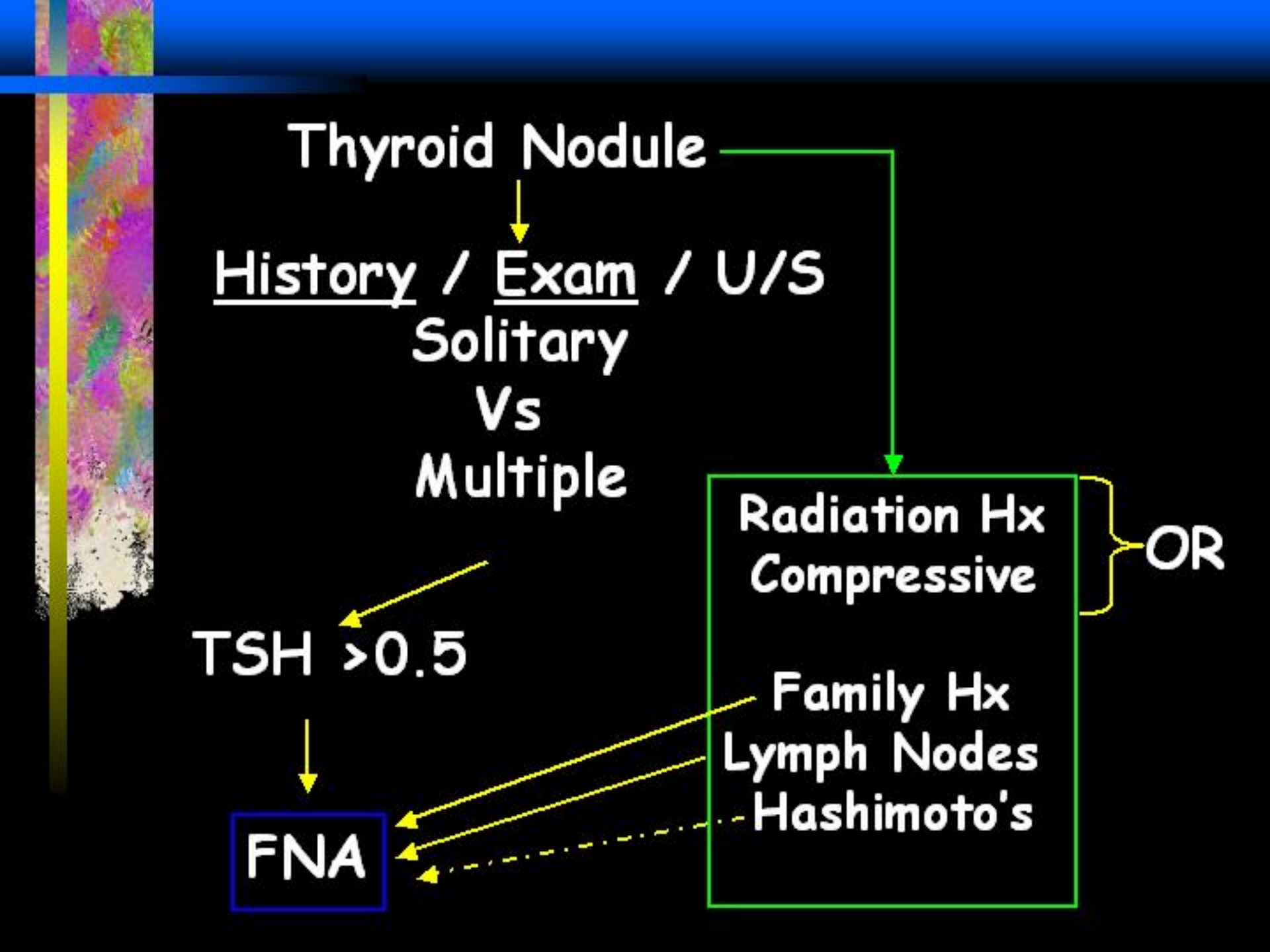
Hot

Benign Follicular Adenoma

Warm

Cold

FNA


Thyroid Nodule
History / Exam / U/S
Solitary
Vs
Multiple
TSH >0.5
FNA
Radiation Hx
Compressive
OR
Family Hx
Lymph Nodes
Hashimoto's

FNA

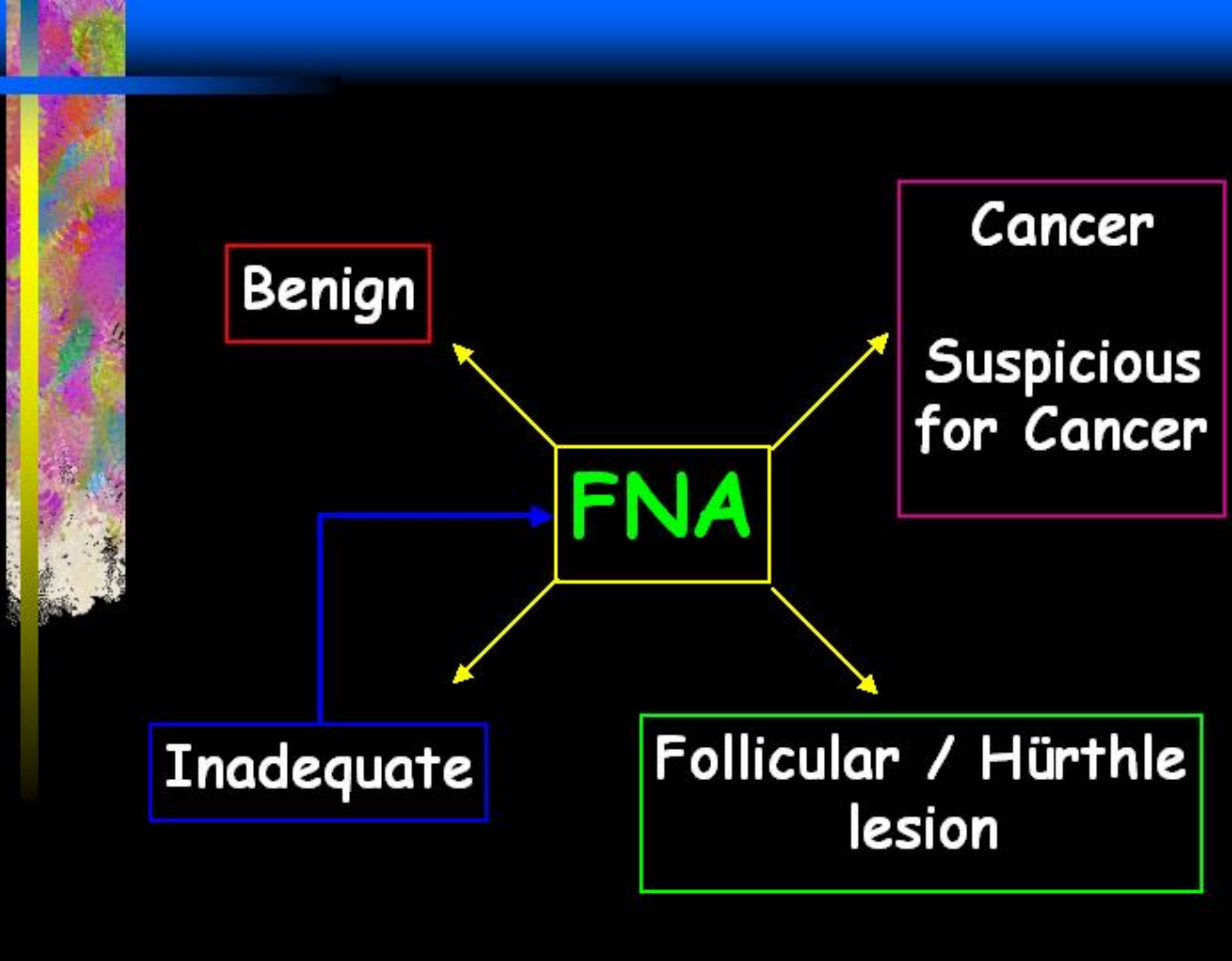
- rule out malignancy
  - 16% to 32% cancer rate
- exclude lymphoma and metastatic
- triage follicular lesions
- not in isolation
  - U/S, exam, history

FNA

- 5-6 groups of ≥ 10 cells
- decrease sampling error with U/S

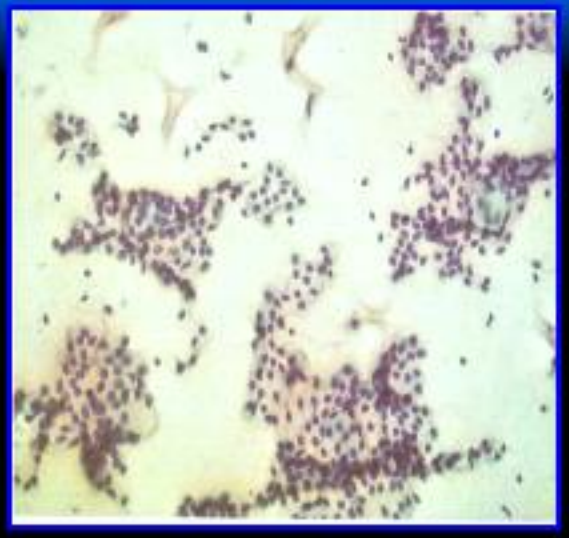
- accuracy is center dependent
- False negatives 2-7%
- False positives 1-16%

- know your cytopathologist


Benign
Cancer
Suspicious for Cancer
FNA
Inadequate
Follicular / Hürthle lesion

Benign FNA

- Colloid nodule
  - follicular (macro)
  - colloid
  - macrophages
  - Hürthle cell changes
- Hashimoto's
  - lymphocytes
  - 'atypical' follicular
  - plasma cells



Does it fit the clinical picture?

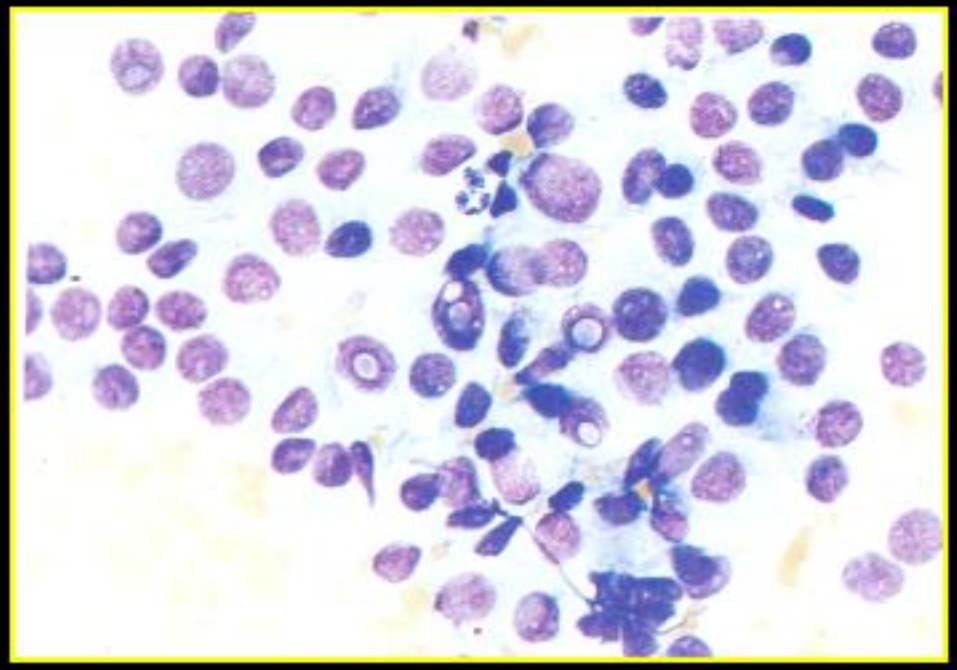
- benign FNA & clinical features
- follow with U/S, exam, TSH

Indications for Surgery in MNG

- ? cancer
- hyperfunction
- compressive symptoms
- interval growth
- prophylaxis
- cosmetic

Cancer

- Anaplastic
- MTC
- Lymphoma
- Secondary Cancer
- Papillary thyroid cancer

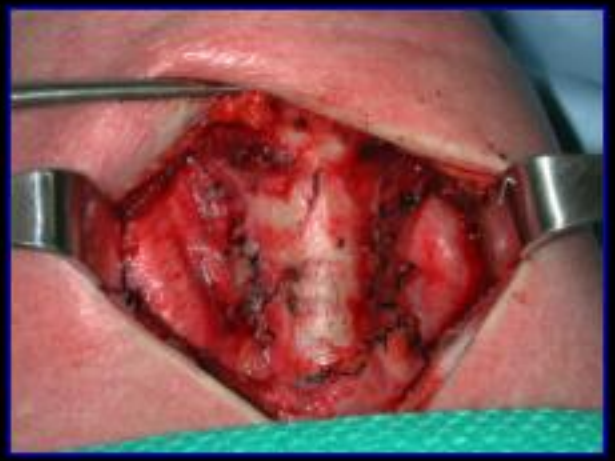


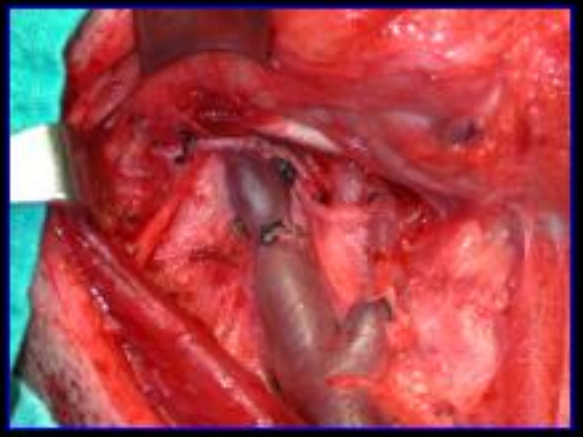
Cancer FNA

- Anaplastic - Study protocol
- Lymphoma - may require open Bx
  - DNA Flow cytometry
- Secondary - renal, breast, melanoma
  - unilateral resection

Cancer

- Medullary Thyroid cancer
  - total thyroidectomy
  - central lymph node
  - ipsilateral modified neck
  - R/O Pheo and HPT preop





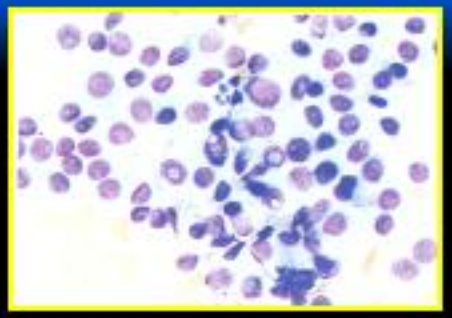
Papillary Thyroid Cancer

- near-total thyroidectomy > 1 cm
  - I ^{131} therapy
  - T4 suppression
- PTC $\leq$ 1cm - thyroid lobectomy

Suspicious for Cancer

- > 60% will be cancer - PTC
  - nuclear grooves, inclusions, Hürthle cell changes
- Follicular neoplasm with atypia
  - Hashimoto's, bleed, FVPTC

Suspicious for Cancer

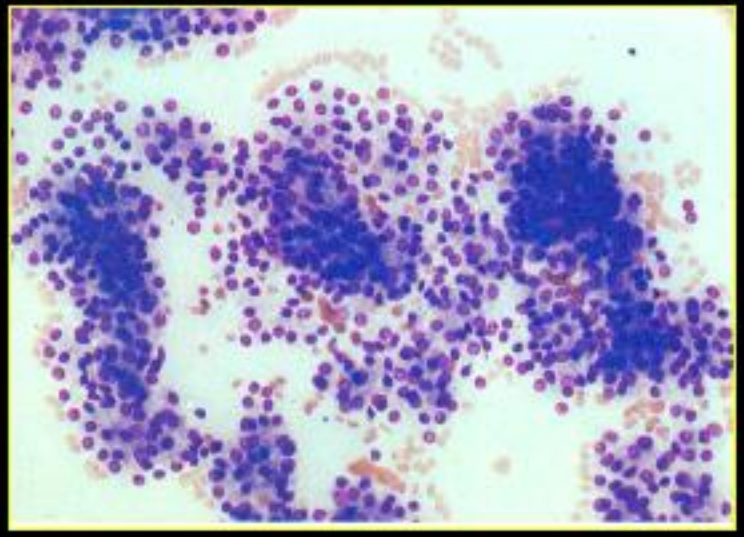


- Frozen Section
  - majority are deferred
  - 6% underdiagnosed
  - nuclear features PTC not seen
  - limited by number of FS
- Touch Prep or Repeat FNA
  - 98% correlation
- treat as a cancer

Follicular / Hürthle Cell Lesions

- sheets of follicular cells
- micro-follicular pattern
- minimal colloid
- clusters of follicular cells

Does it fit?

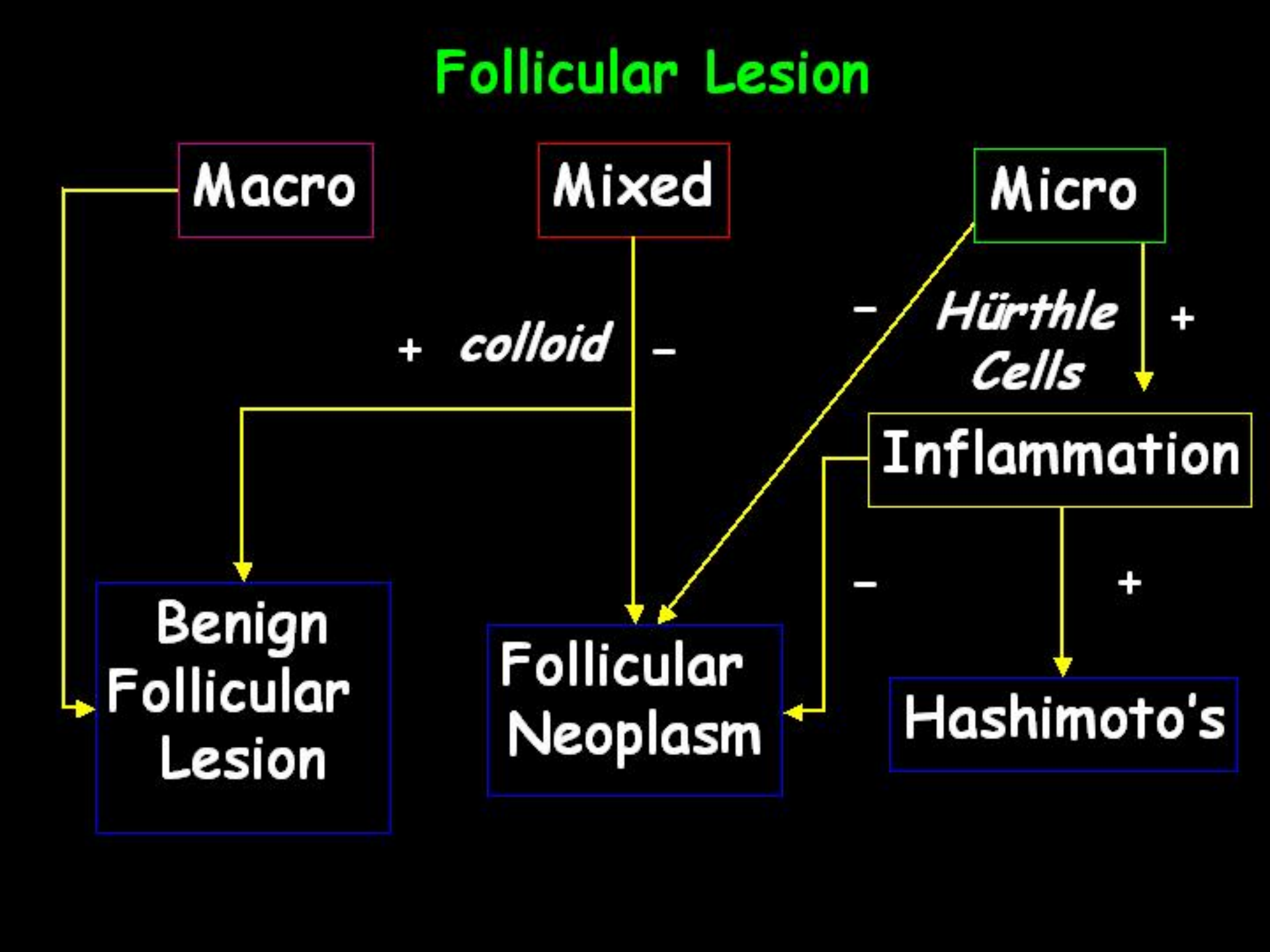


Follicular / Hürthle Cell Lesions

- hyperplastic nodule
- colloid nodule

- adenoma
- follicular variant of PTC
- follicular carcinoma
  - minimally invasive
  - carcinoma (angio invasion)

neoplasm


Follicular Lesion
Macro
Mixed
Micro
+ colloid –
– Hürthle Cells +
Inflammation
– +
Benign Follicular Lesion
Follicular Neoplasm
Hashimoto's

Follicular / Hürthle Cell Neoplasms

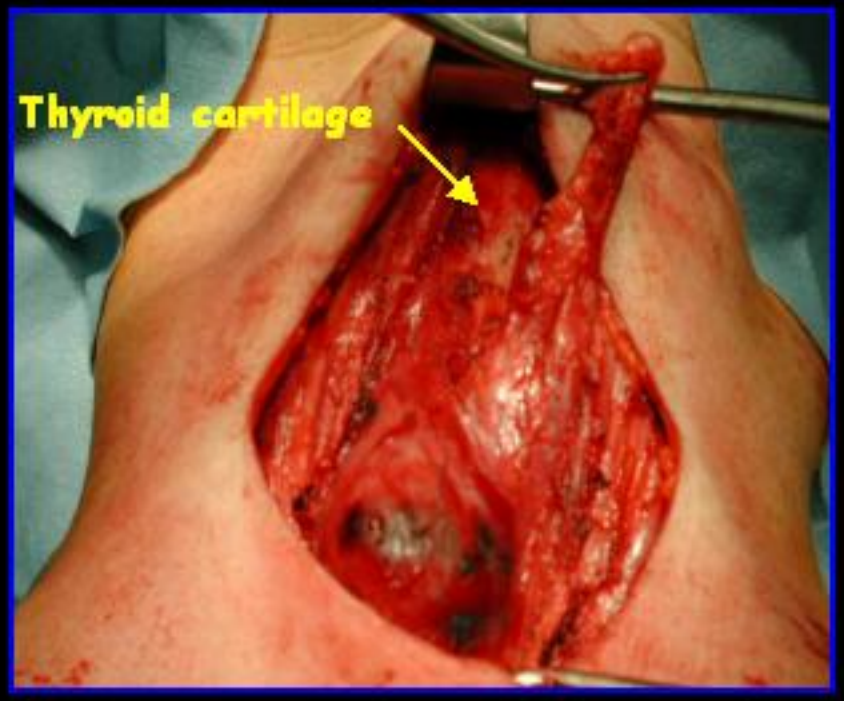
- 20 – 40% are cancer
- not all require a total thyroidectomy
  - some low risk WDTC
  - minimally invasive follicular cancer
  - micro-papillary thyroid cancer
- FS will *NOT* rule out FVPTC
- or invasion of Follicular Ca

Follicular / Hürthle Cell Neoplasm

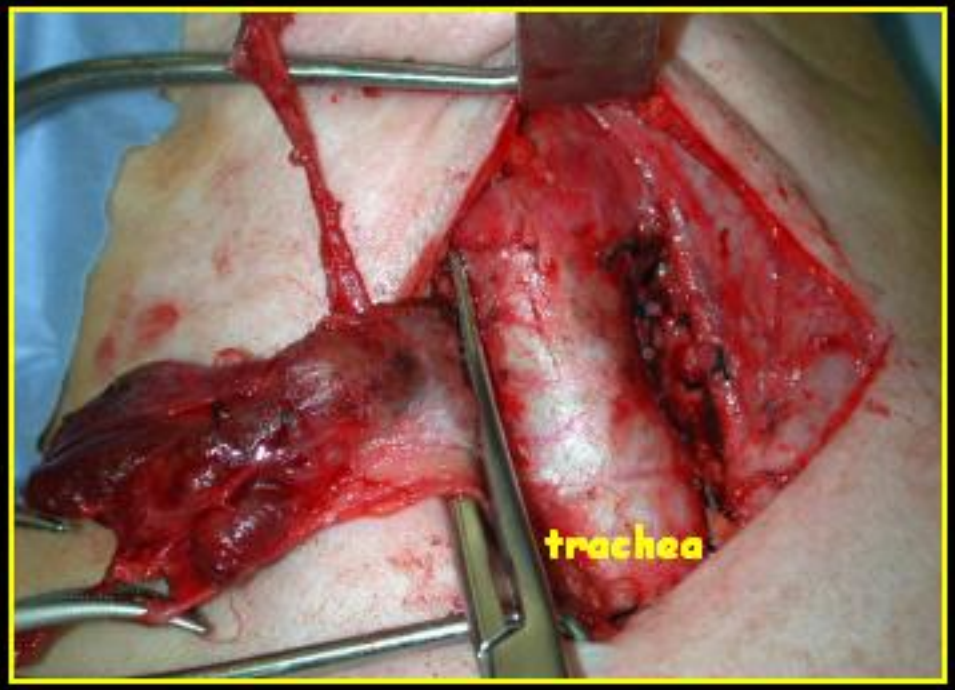
- ~~total lobectomy / subtotal~~

- near total thyroidectomy
  - > 45 years of age
  - > 4 cm
  - solitary
  - male

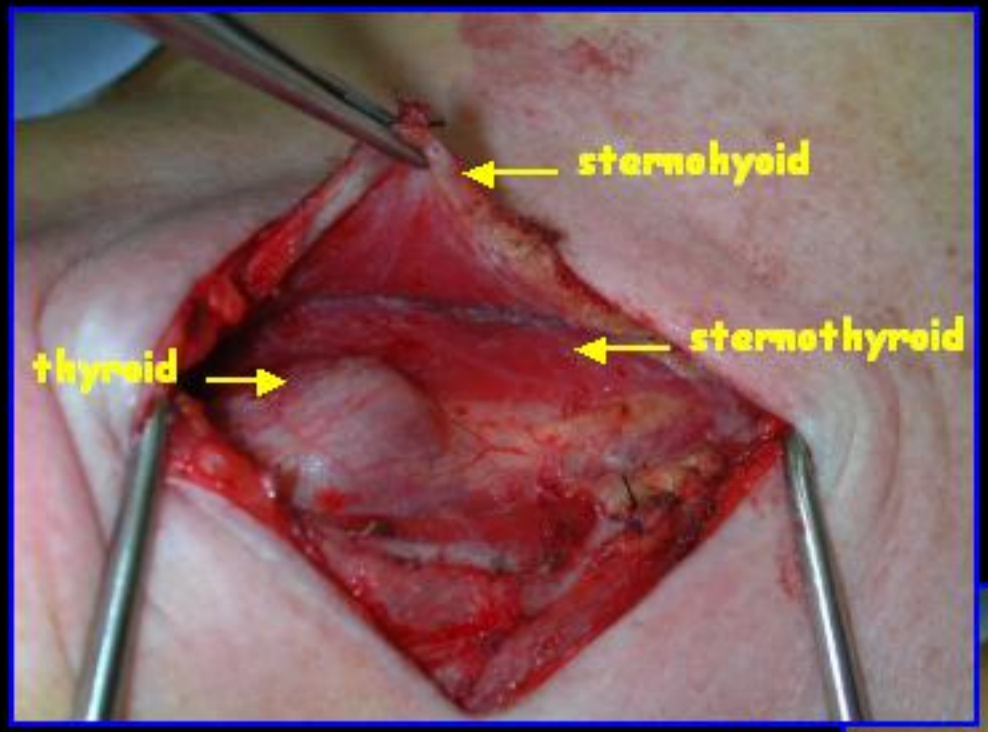
- diagnostic lobectomy



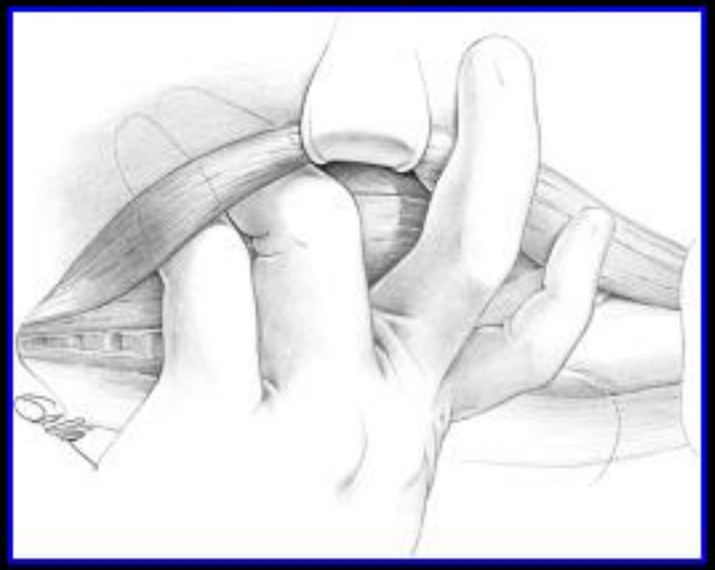
Pyramidal Lobe

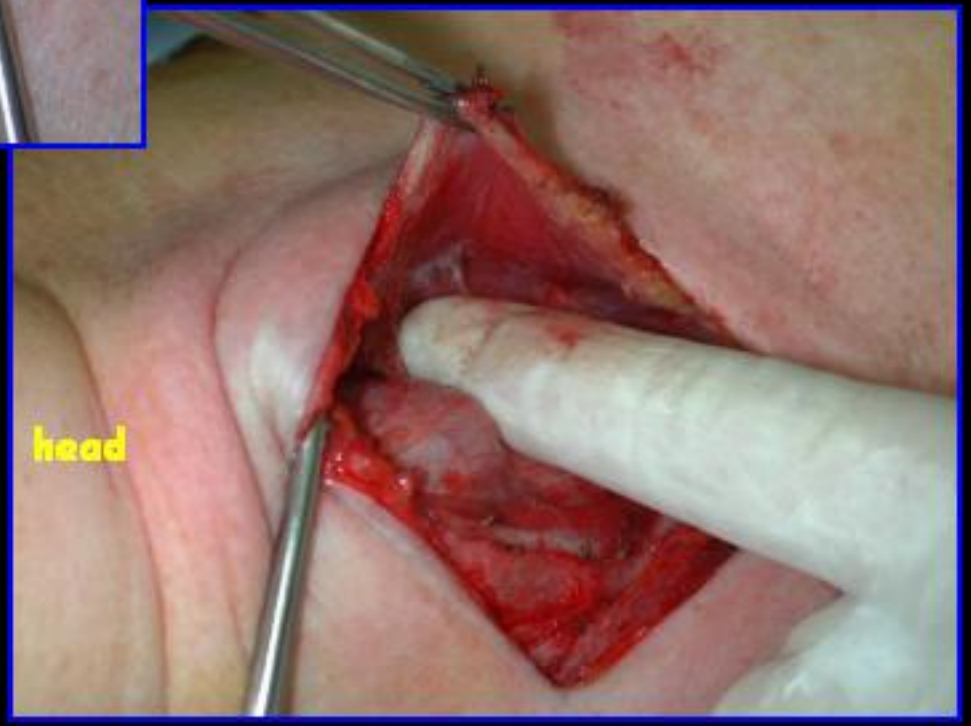


Isthmus



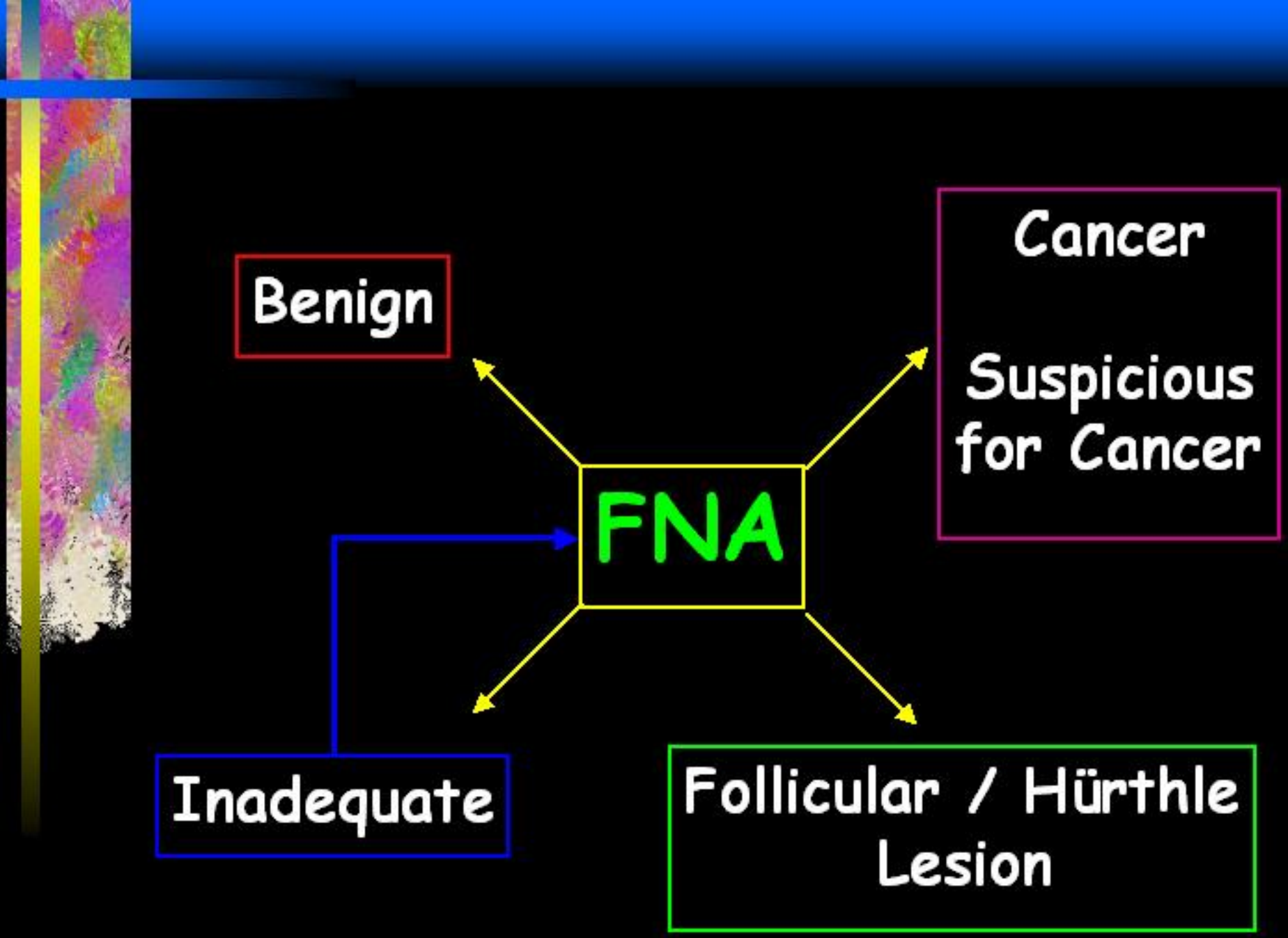
Palpate between the strap muscles





Follicular / Hürthle Cell Neoplasm

- physical exam and U/S
  - ? intra-op FNA
  - ? intra-operative touch prep
- *Minimal Thyroid Operation*
  - Total thyroid lobectomy and isthmusectomy
- Completion Thyroidectomy if needed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