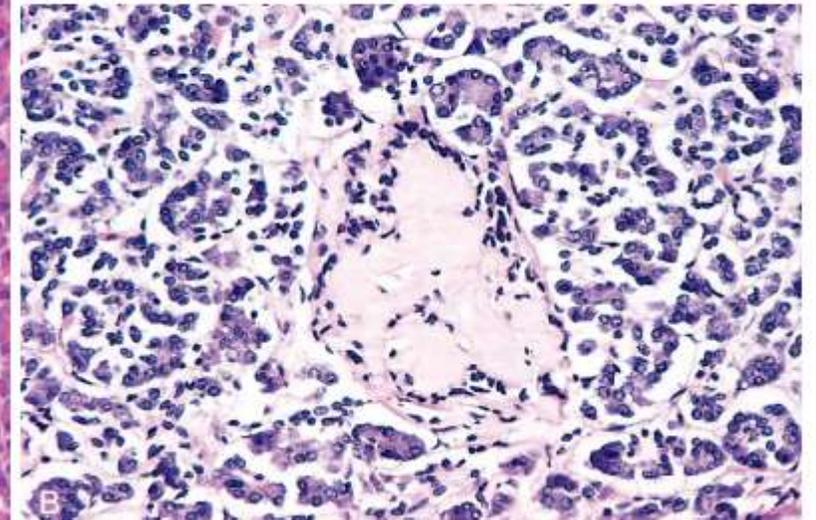
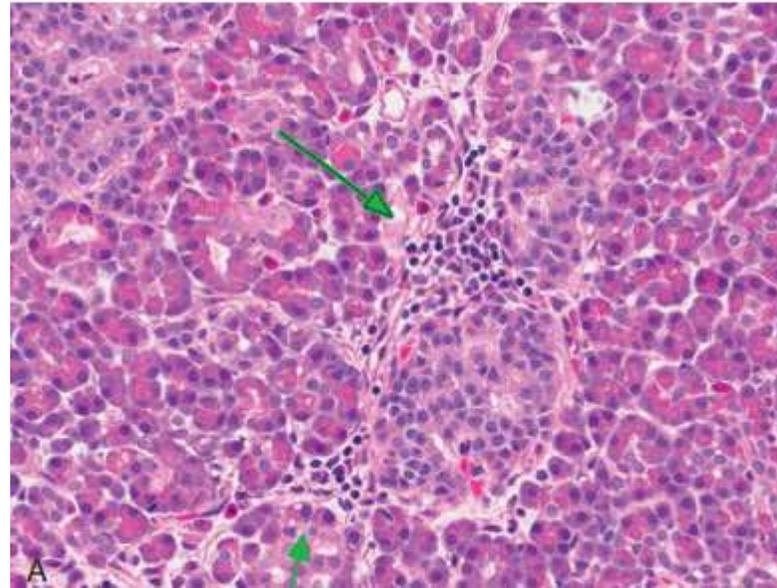


endocrine system  
Patho lab 2

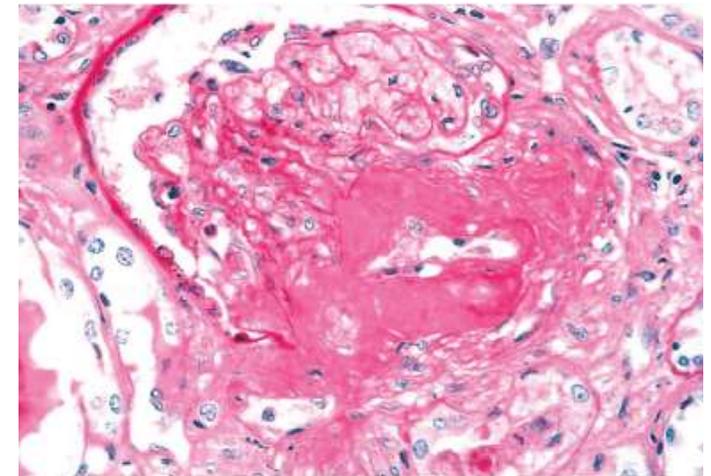
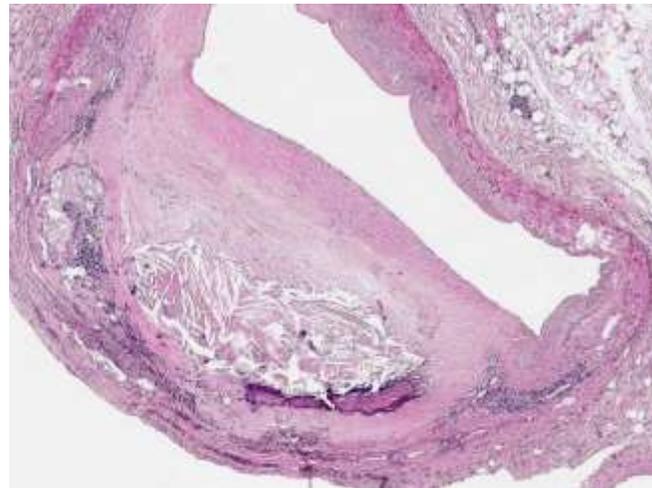
# MORPHOLOGY

- Reduction in the number and size of islets.
- Leukocytic infiltrates in the islets.
- Amyloid deposition within islets in type 2 diabetes.



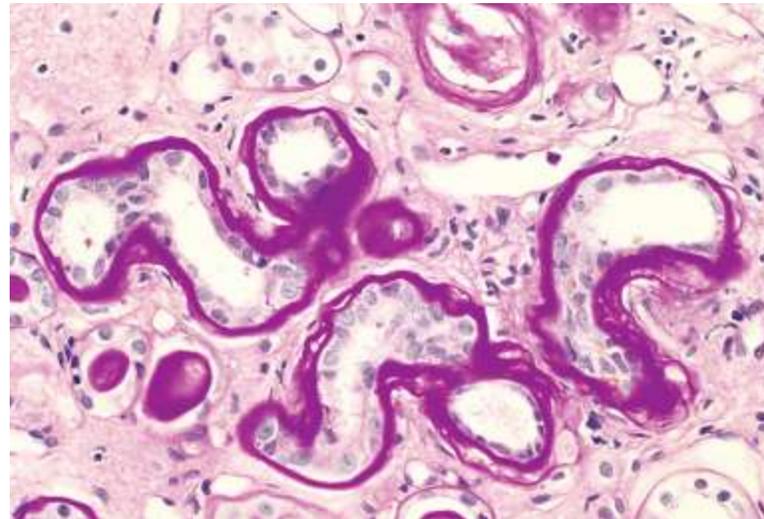
# Morphology cont.

- Diabetic macrovascular disease. The hallmark of diabetic macrovascular disease is accelerated atherosclerosis.
- Hyaline arteriolosclerosis.

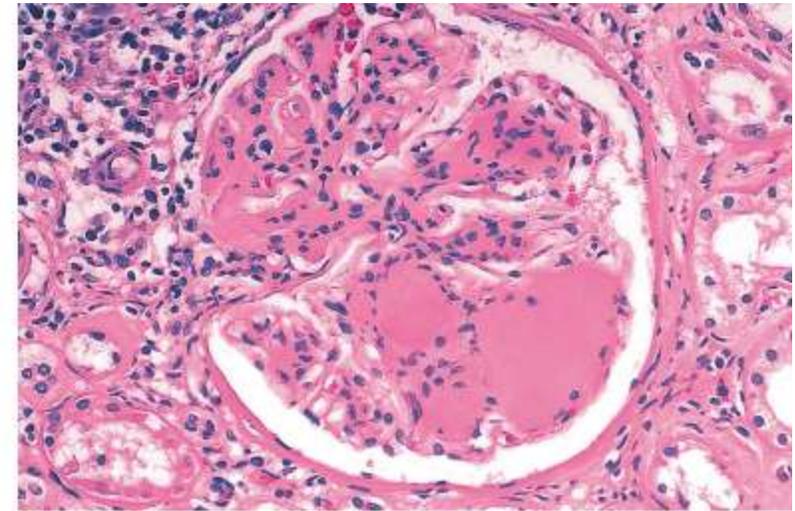


# Diabetic nephropathy.

- glomerular lesions.
- renal vascular lesions, principally arteriolosclerosis.



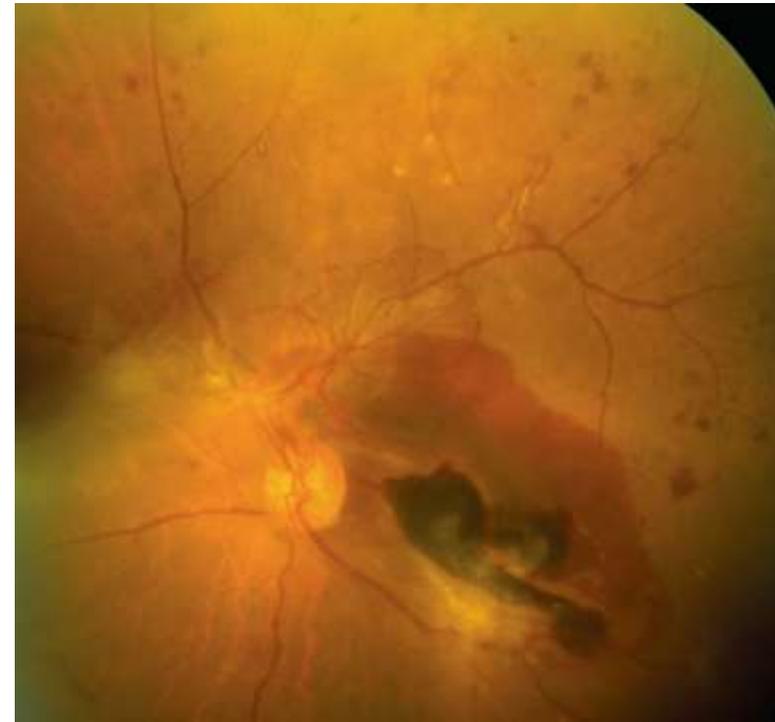
Renal cortex showing thickening of tubular basement membranes .



Nodular glomerulosclerosis

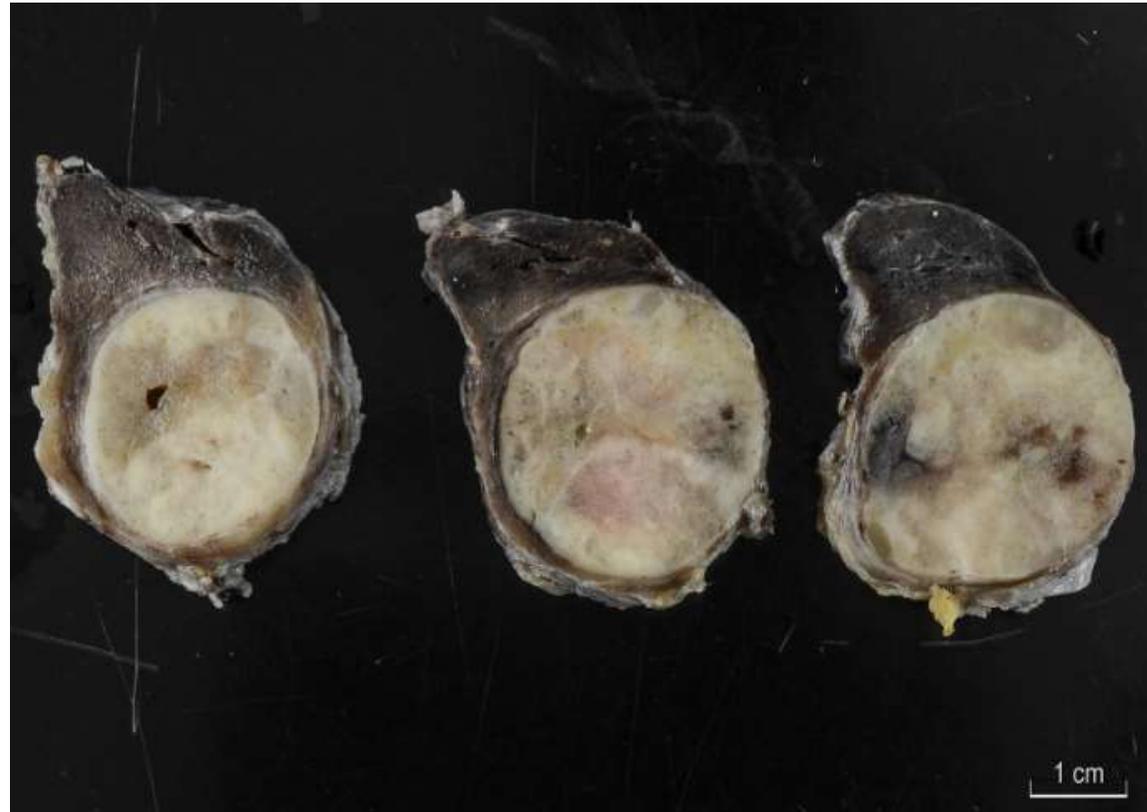
# diabetic retinopathy

- Features include:
  - ✓ advanced proliferative retinopathy.
  - ✓ retinal hemorrhages.
  - ✓ Exudates.
  - ✓ neovascularization.
  - ✓ tractional retinal detachment



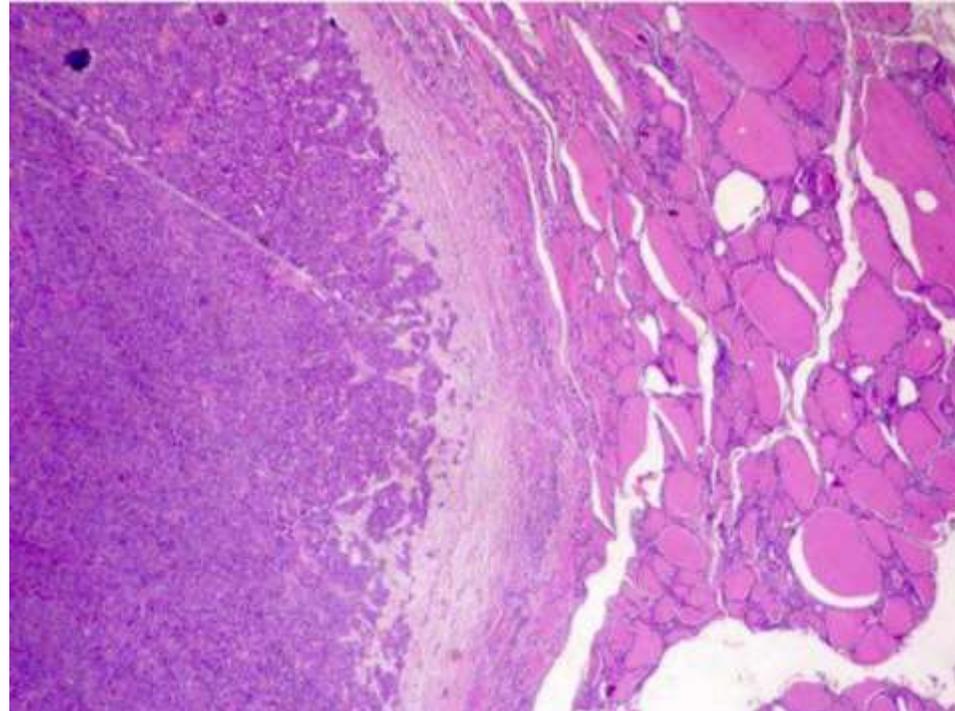
# Morphology, adenoma

- Solitary, encapsulated, variable size (1 - 10 cm).



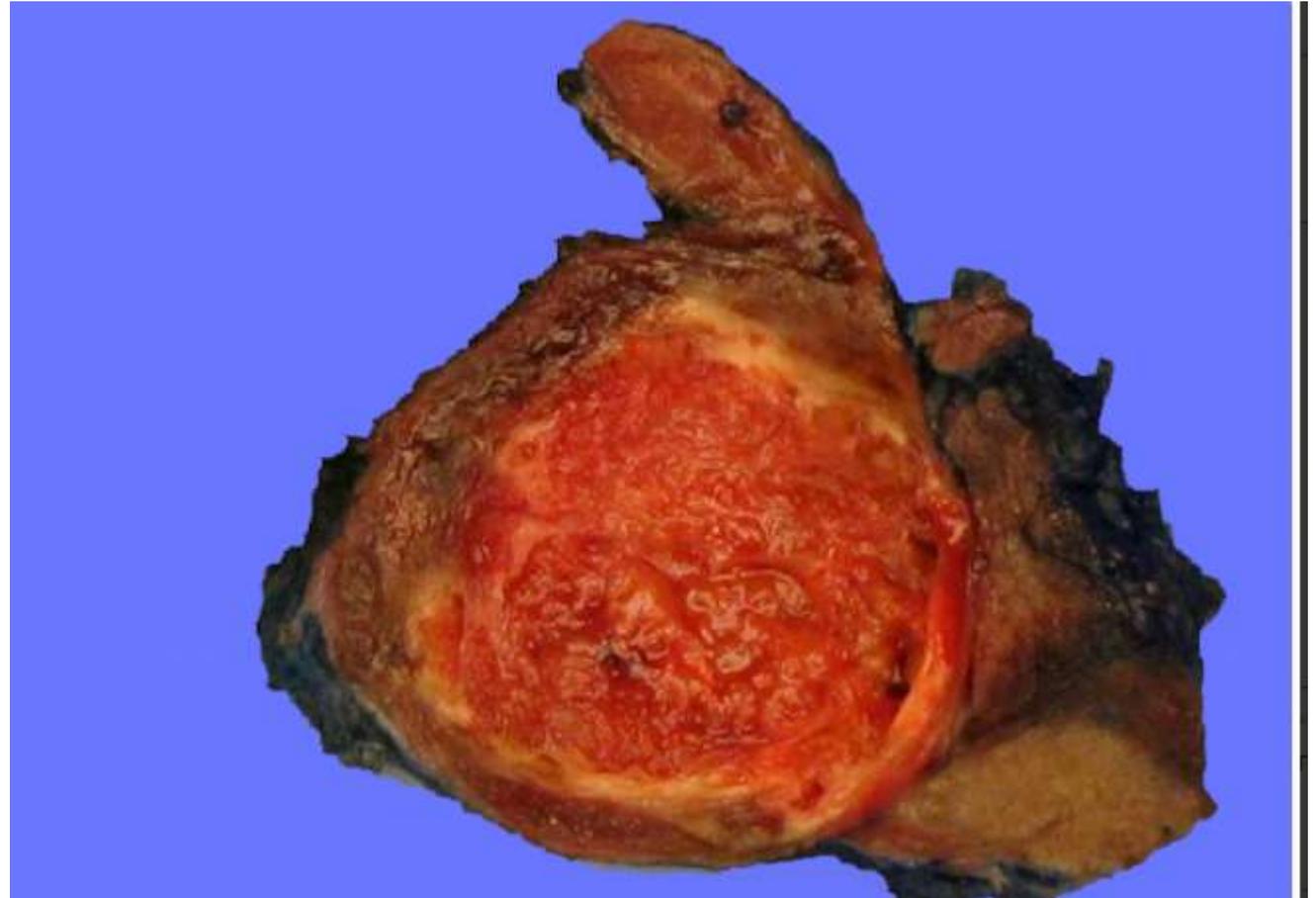
# Histology

- Closely packed follicles.
- Completely enveloped by thin fibrous capsule
- surrounding thyroid tissue shows signs of compression.



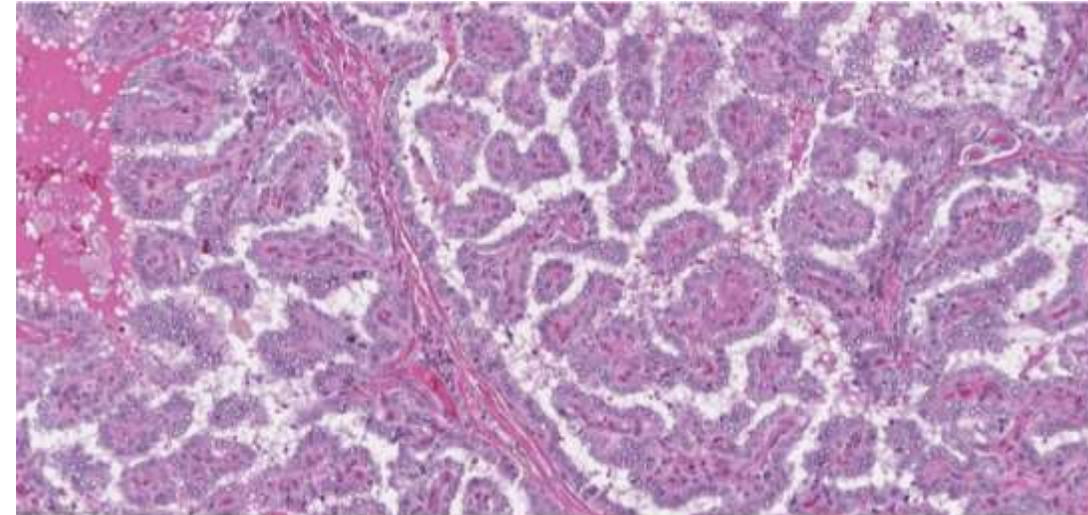
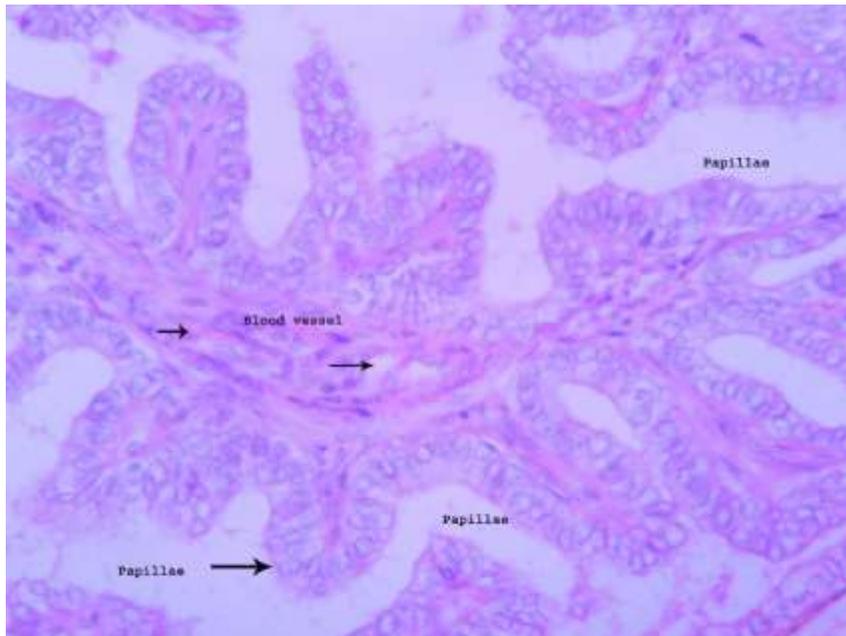
# Morphology. PTC

- Solid or cystic mass with papillary projections

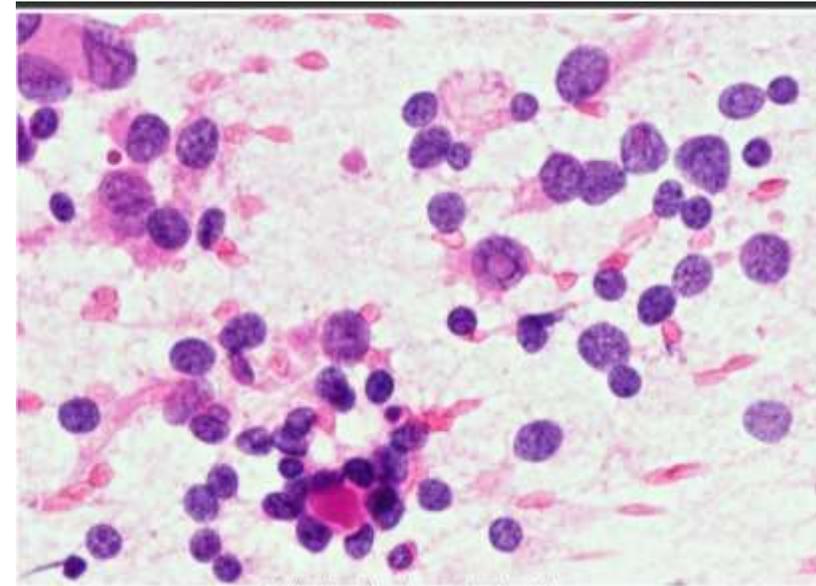
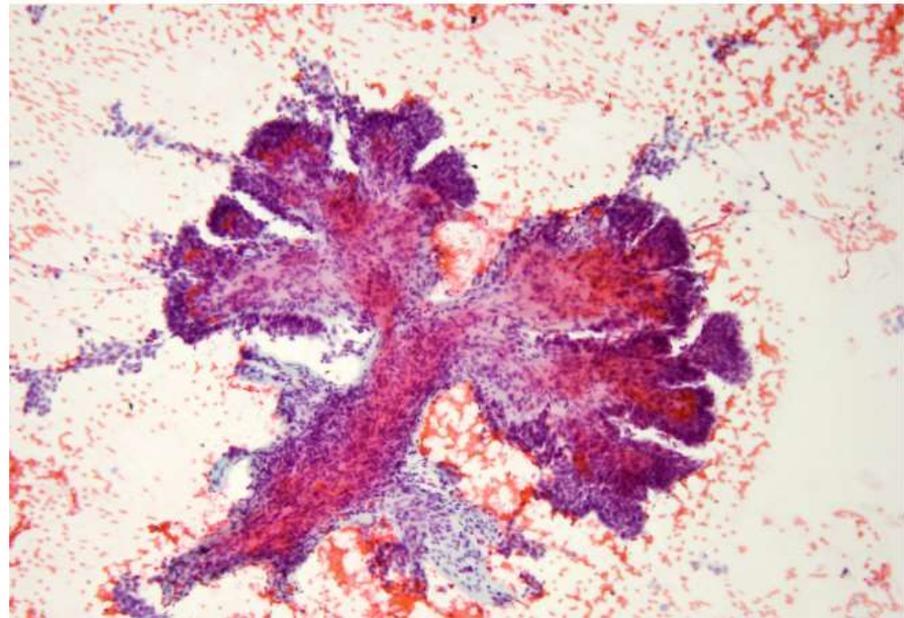
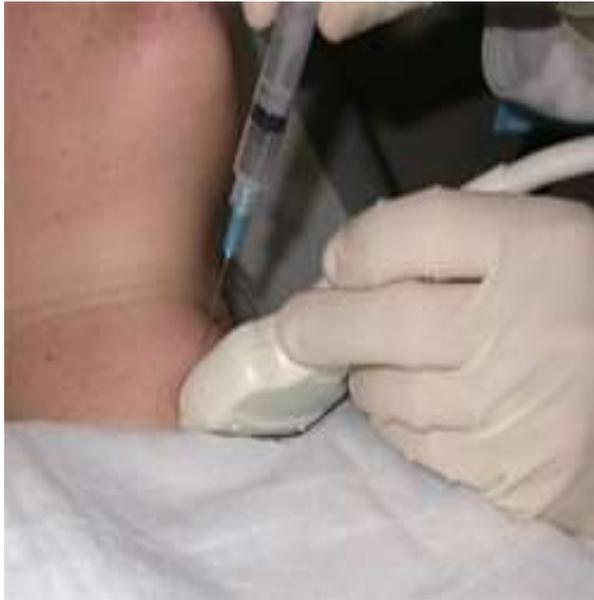


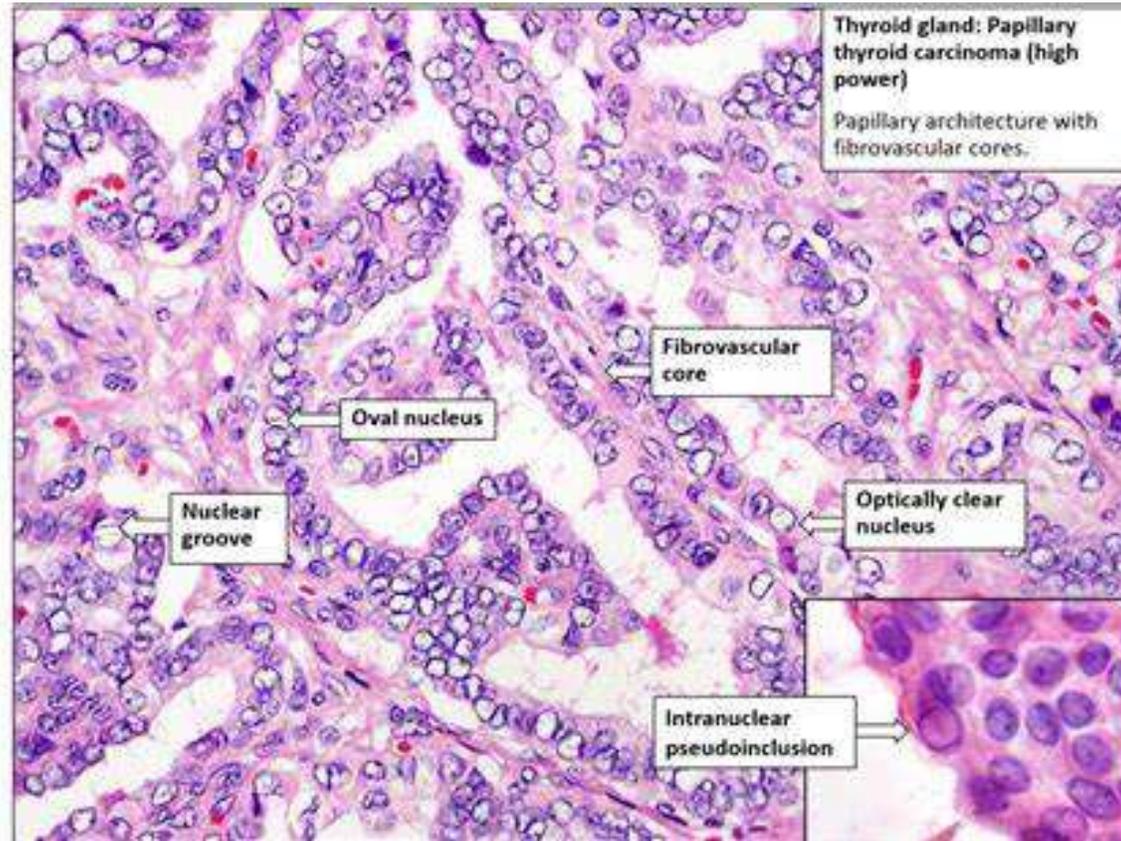
# Histology.

- Defined by two cardinal features:
  - ✓ true papillae with a fibrovascular core.
  - ✓ nuclear features of papillary carcinoma.

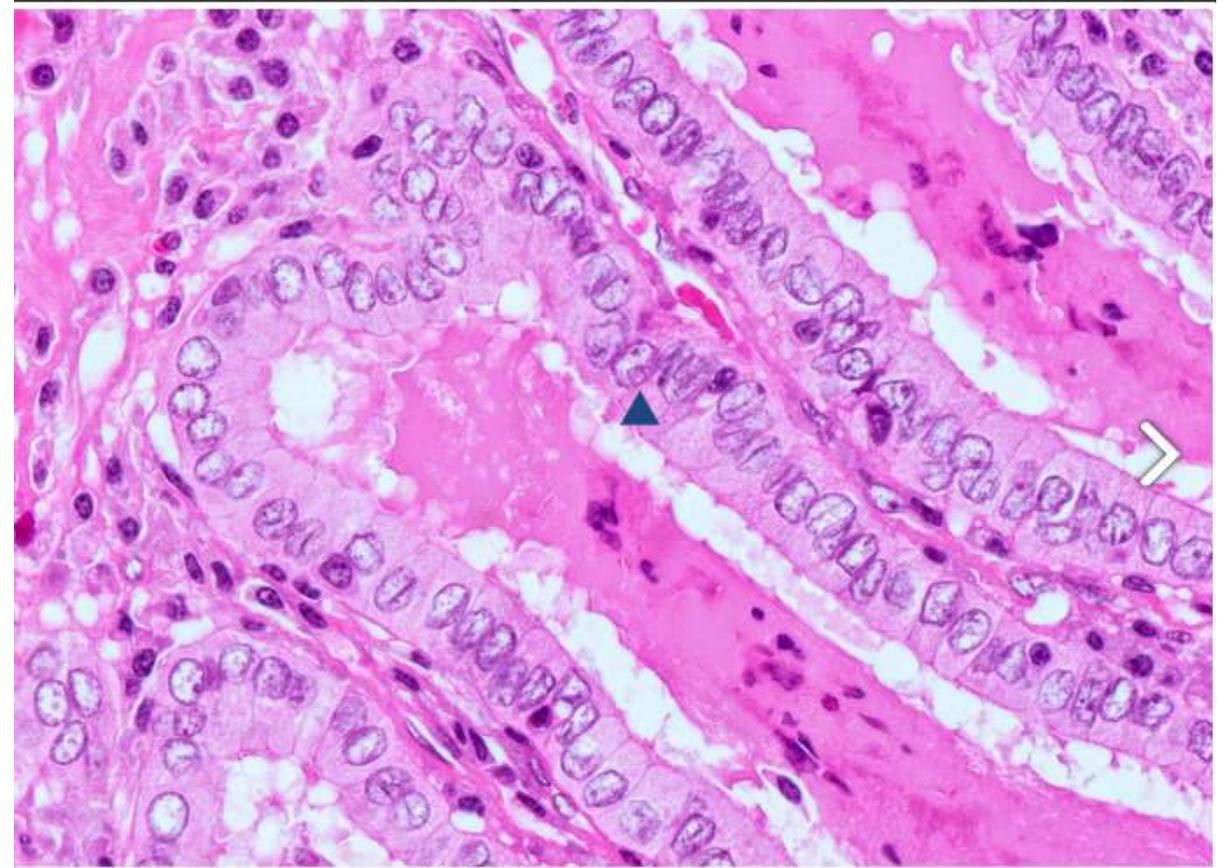
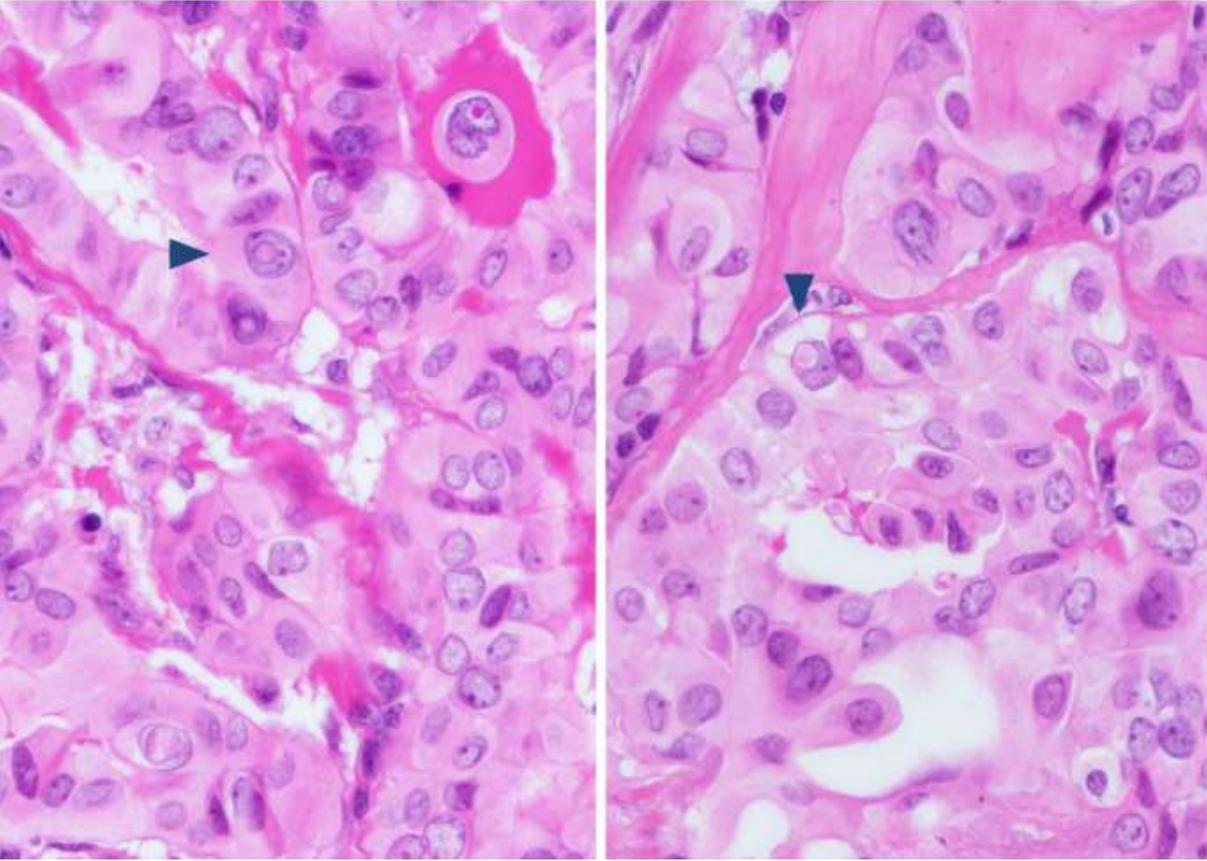


ultrasound guided pre-operative fine needle aspiration cytology.





- irregular nuclear contour.
- nuclear groove.
- nuclear pseudoinclusion



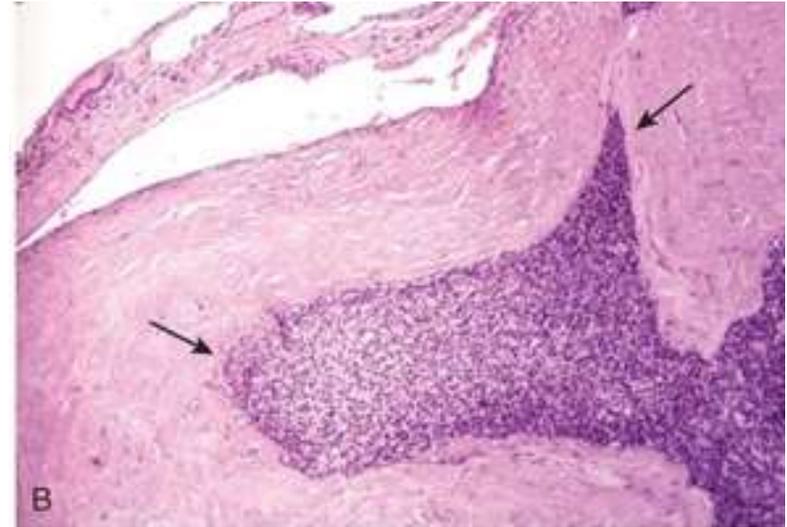
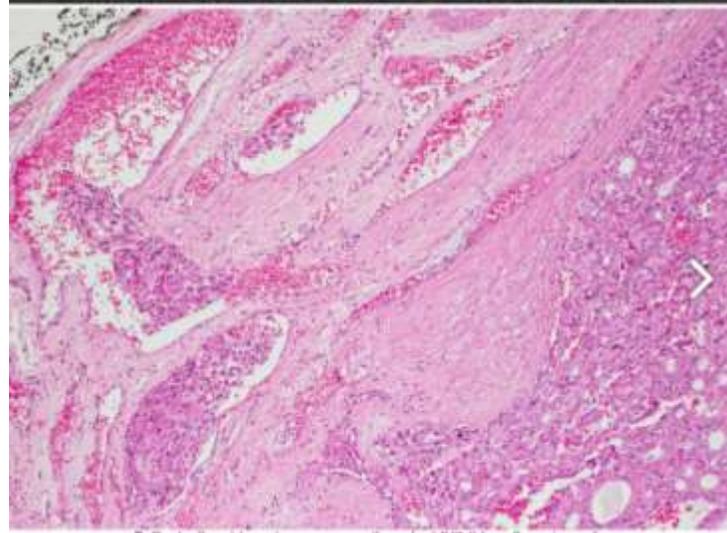
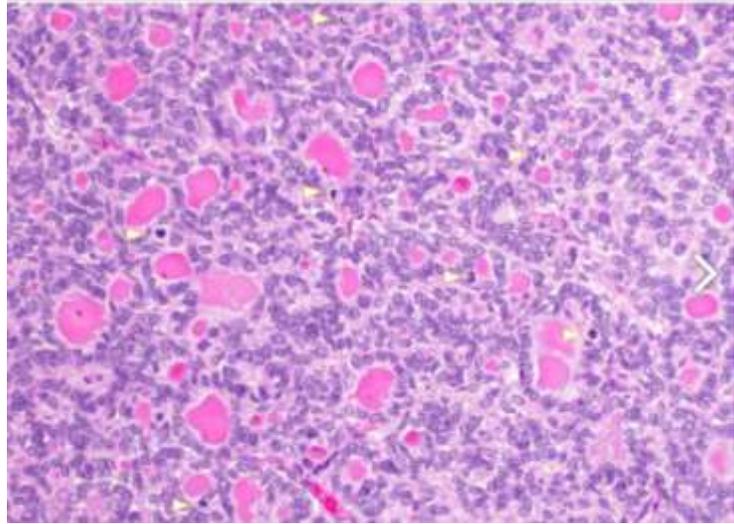
Papillary thyroid carcinoma nuclei:

# Morphology

## FOLLICULAR CARCINOM, A

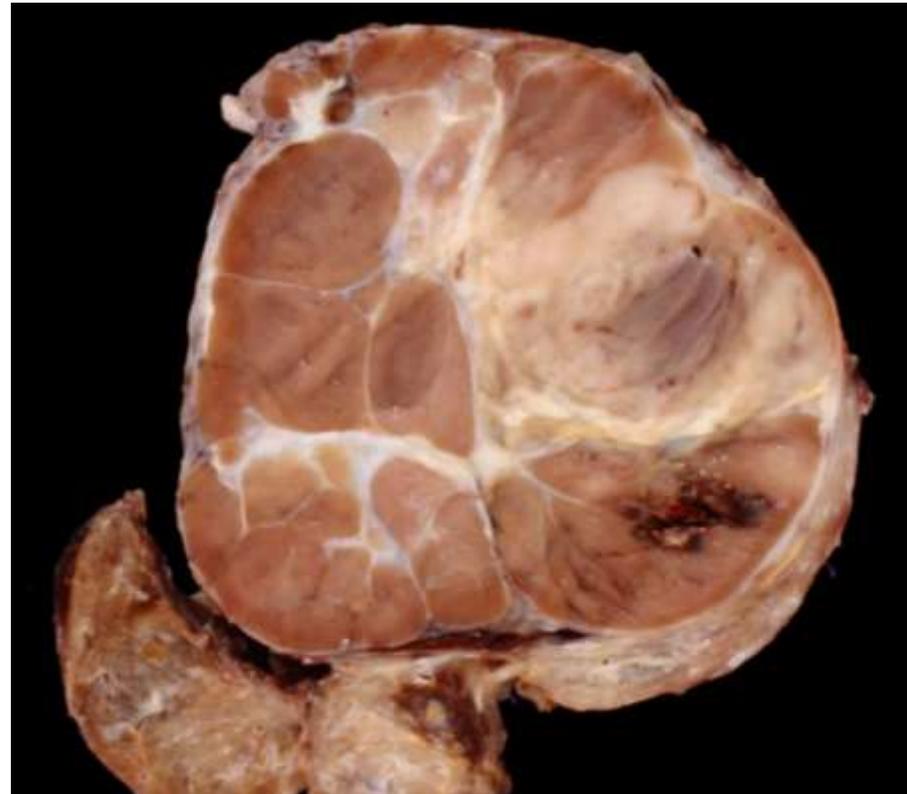
- Tan to brown solid cut surface, can have cystic changes and hemorrhage
- Minimally invasive: usually single encapsulated nodule, with thickened and irregular capsule
- Widely invasive: extensive permeation of capsule or no capsule.





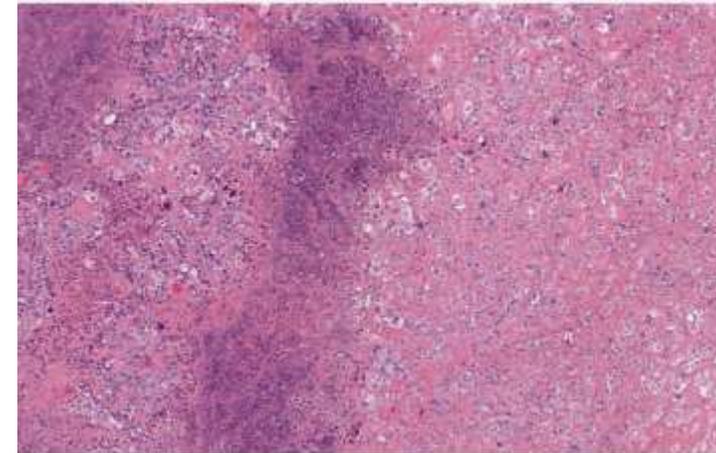
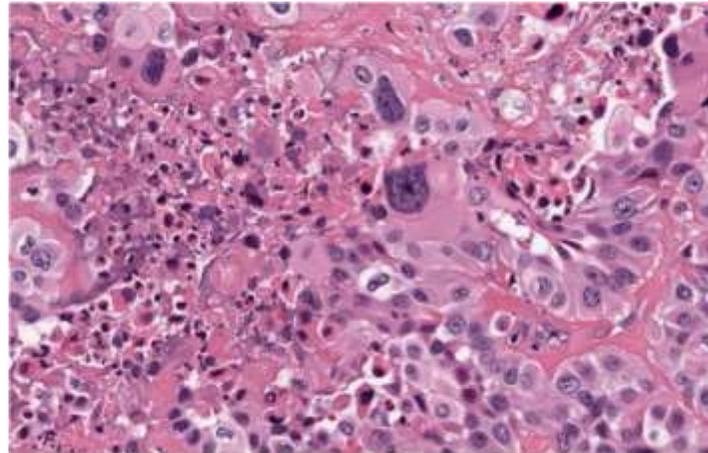
# Morphology, ANAPLASTIC CA

- Bulky solid mass (mean: 6 cm) with zones of necrosis or variegated appearance.



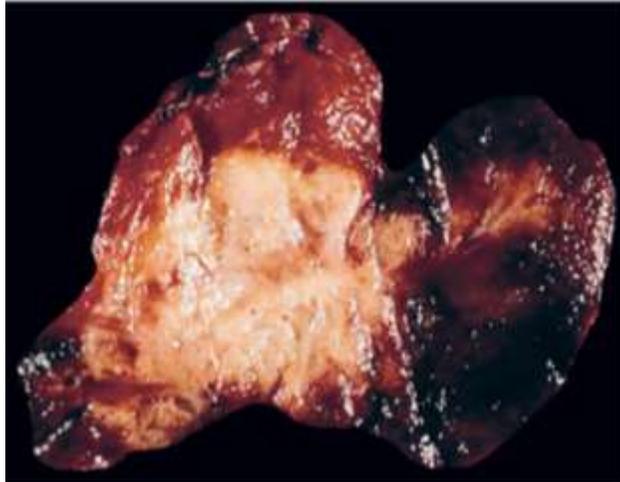
# Histology

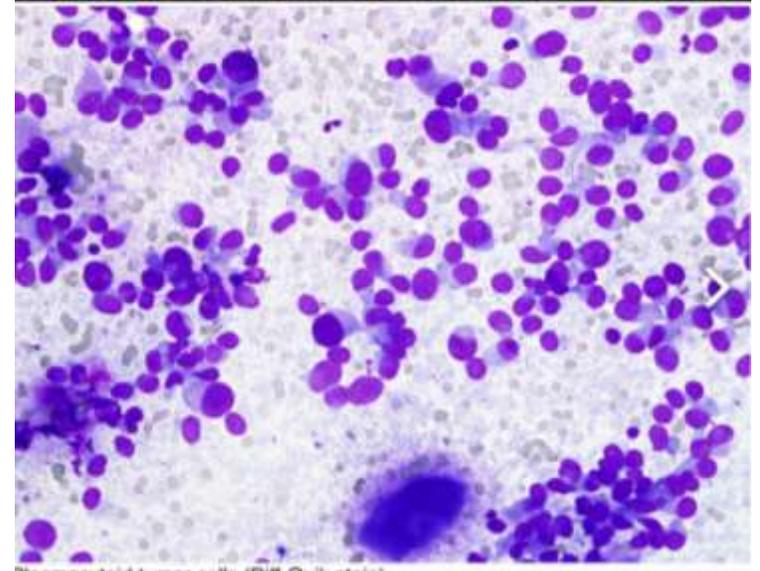
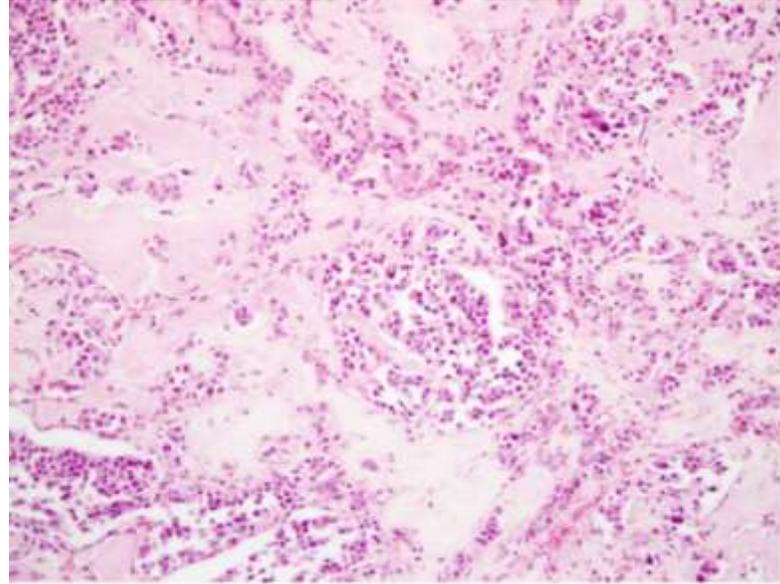
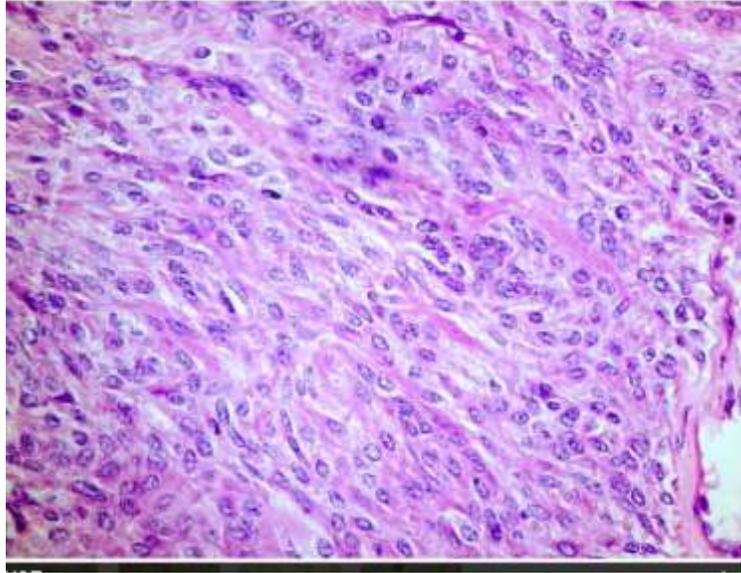
- Common features include :
  - ✓ widely invasive growth.
  - ✓ extensive tumor necrosis.
  - ✓ marked nuclear pleomorphism .
  - ✓ high mitotic activity



# Morphology, MEDULLARY CA

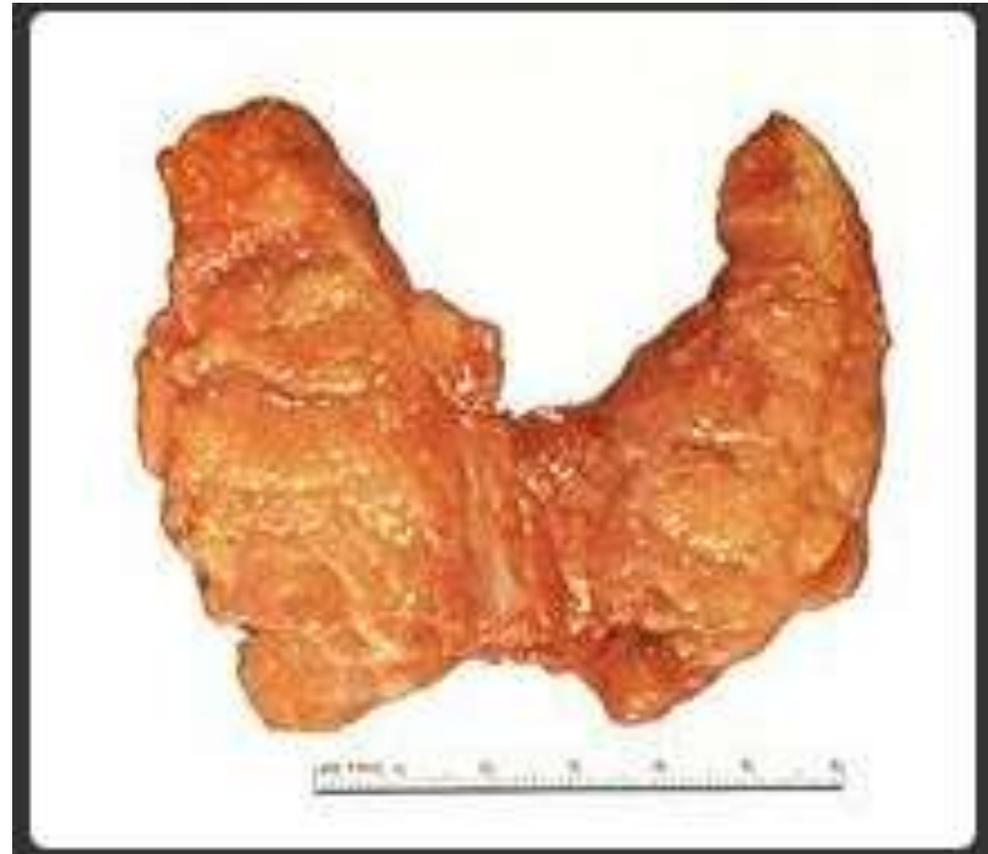
- **Sporadic:** typically presents as a single circumscribed but nonencapsulated, gray-tan mass
- **Familial:** generally bilateral / multiple foci.





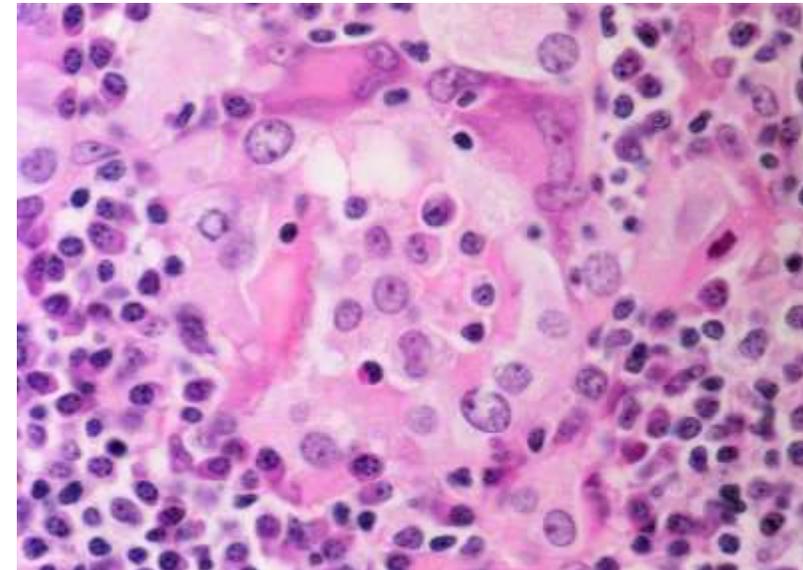
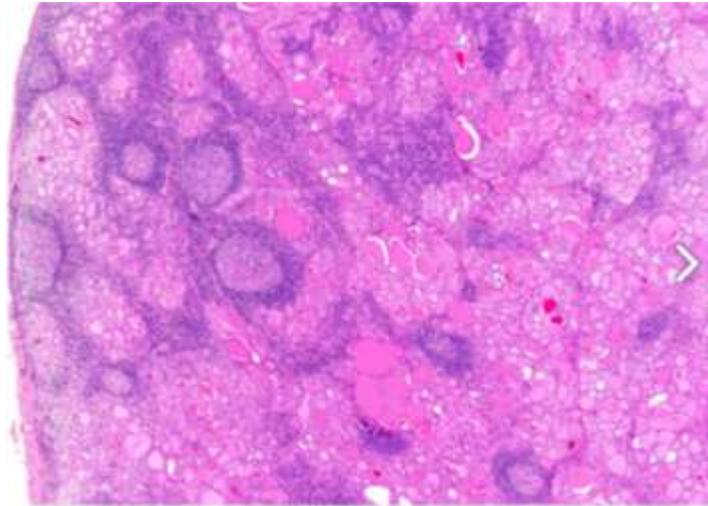
# Morphology, Hashimoto

Gland is a smooth pale goiter, minimally nodular, well demarcated.



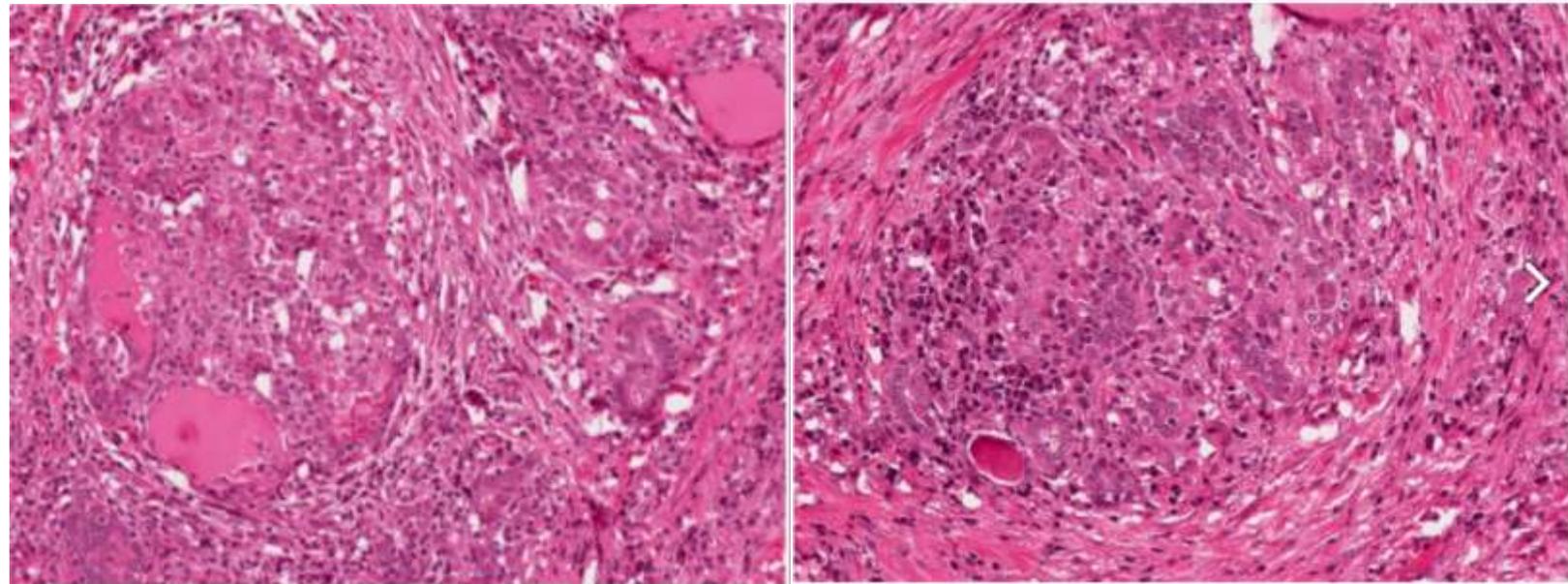
# Microscopic

- Dense infiltration by lymphocytes & plasma cells
- Formation of lymphoid follicles, with germinal centers
- Presence of HURTHLE CELLS



# Morphology, de Quervain Thyroiditis

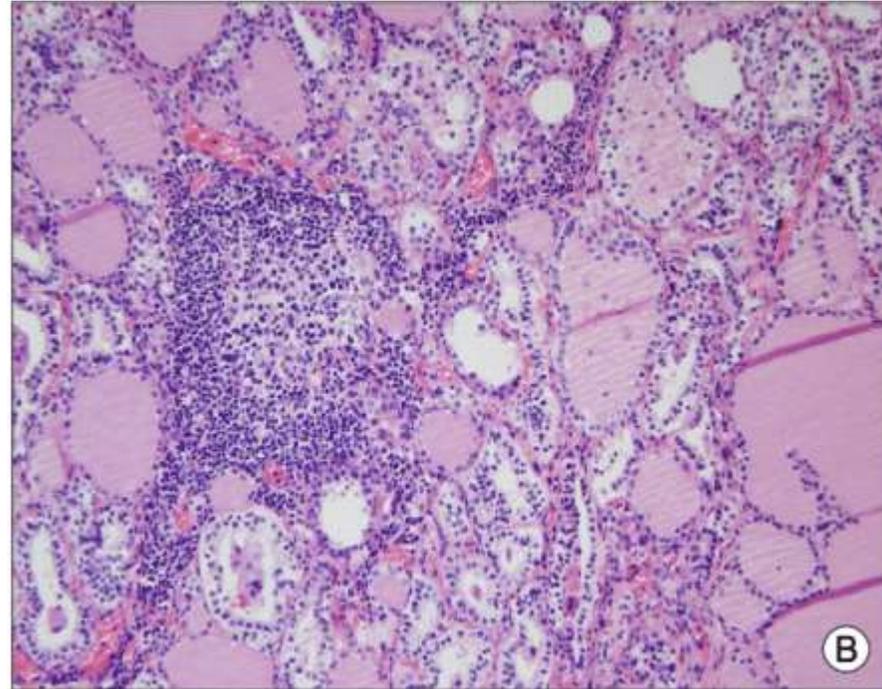
- Destruction of acini leads to mixed inflammatory infiltrate.
- Neutrophils , Macrophages & Giant cells & formation of granulomas.



- Preserved lobular pattern with follicular destruction.
- variable lymphocytic infiltrate.
- rare / no oncocytic change.
- no / focal fibrosis

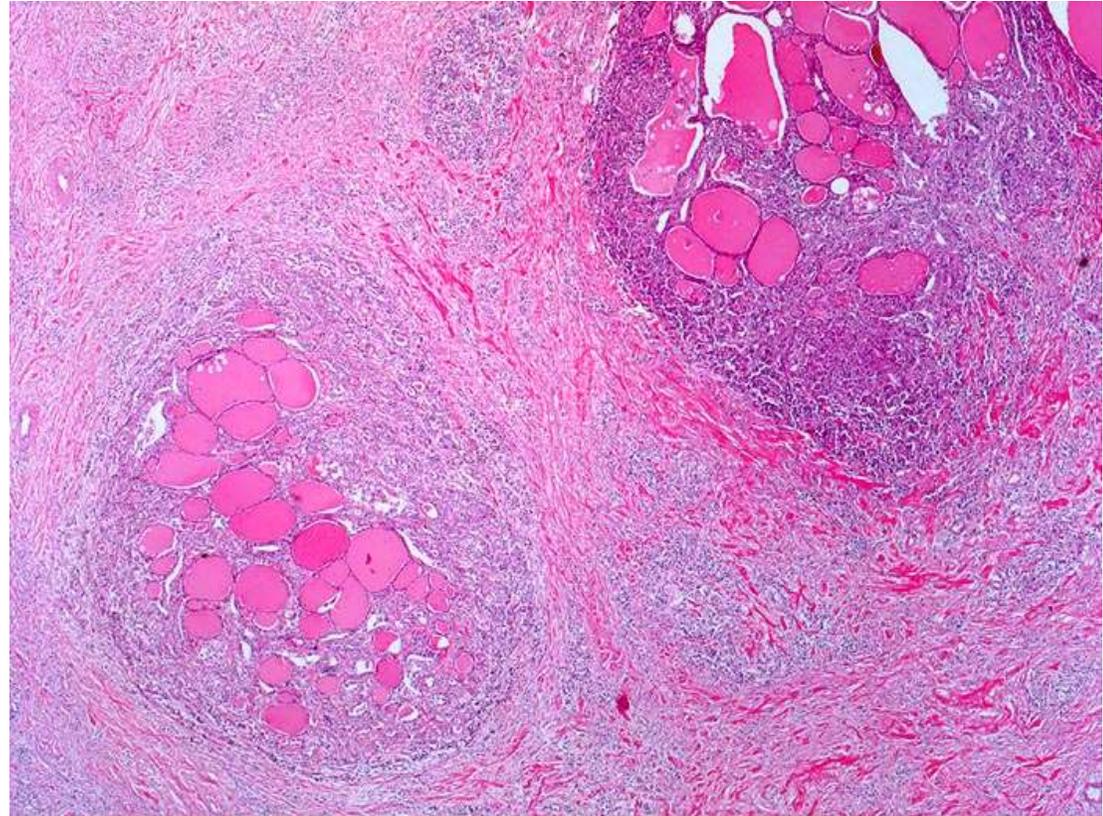
Morphology

## SUBACUTE LYMPHOCYtic THYROIDITIS : (Silent



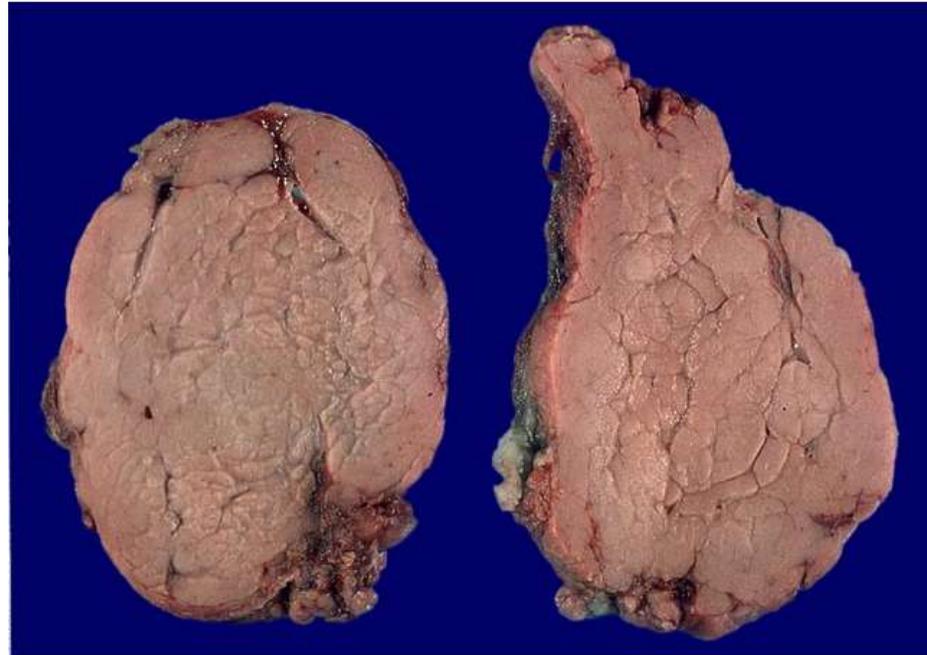
# \*\*Morphology, Reidel's Thyroiditis

Follicles are obliterated or compressed by extensive dense fibrous tissue



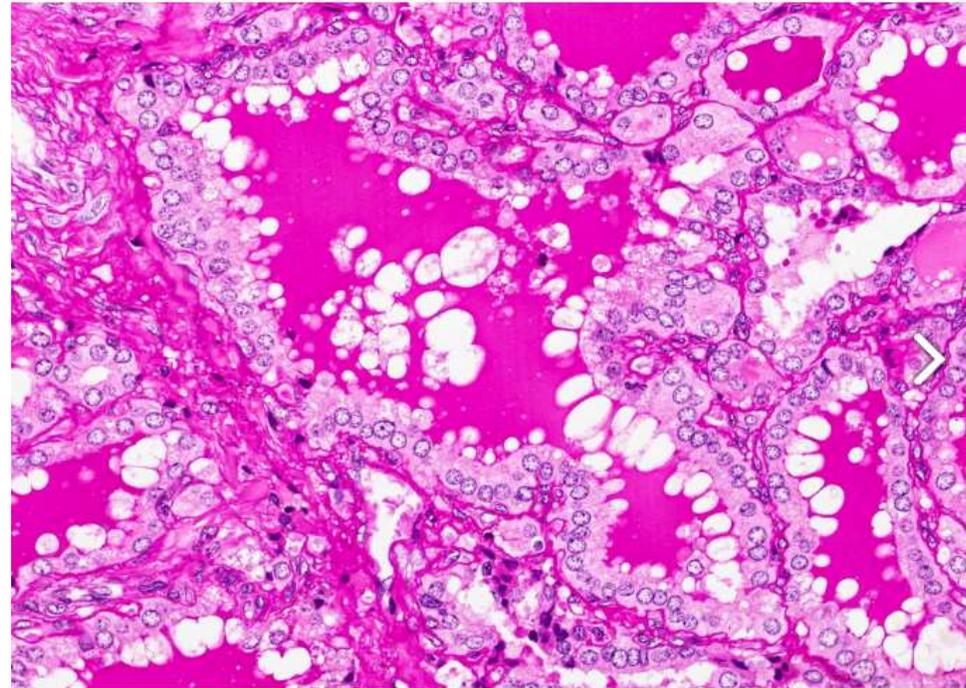
# Morphology. GRAVE'S DISEASE

- Diffuse and symmetrically enlarged thyroid gland with beefy red cut surface.



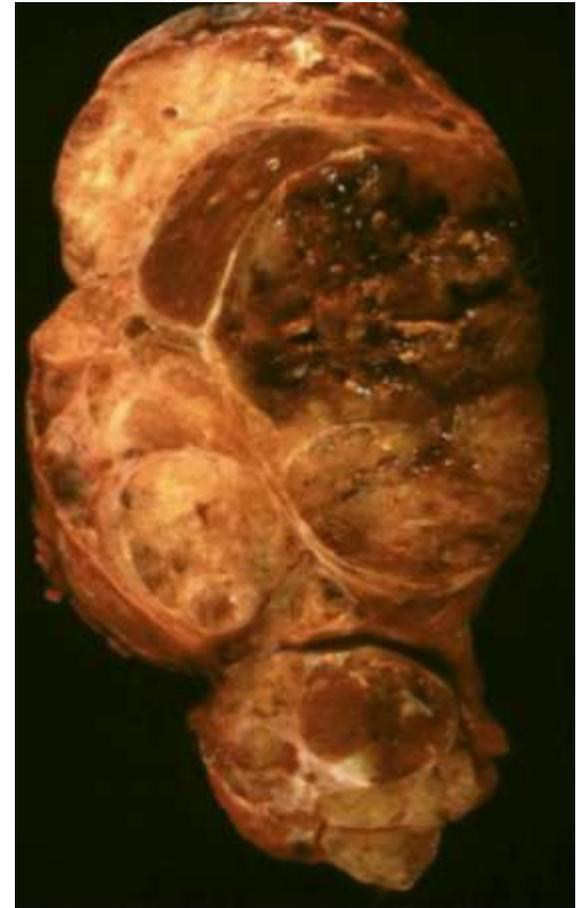
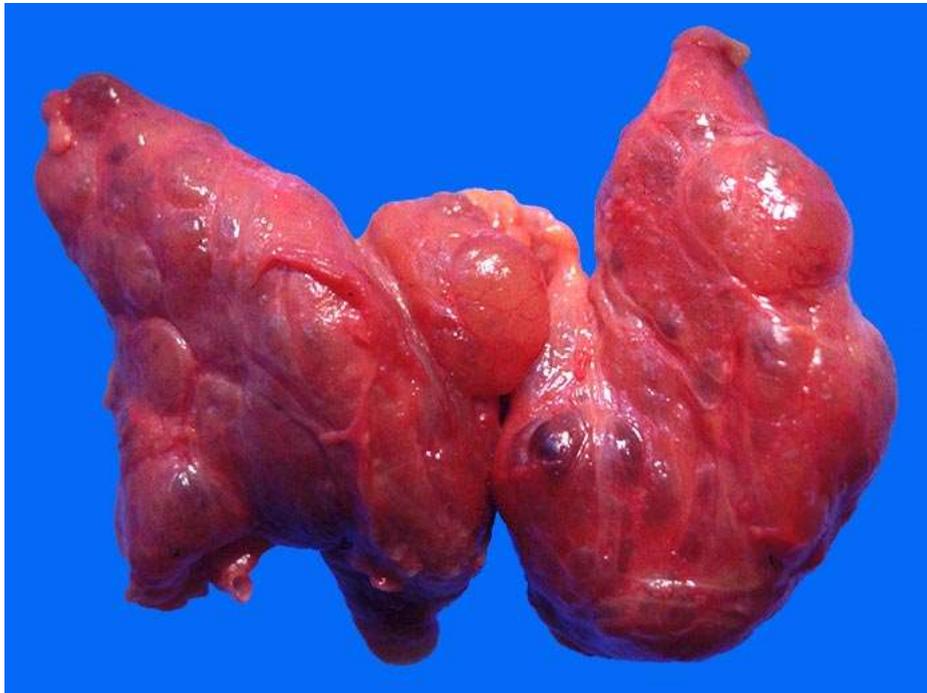
# Histology

- Hyperplastic thyroid follicles with papillary infoldings
- Colloid is typically decreased, when present shows peripheral scalloping



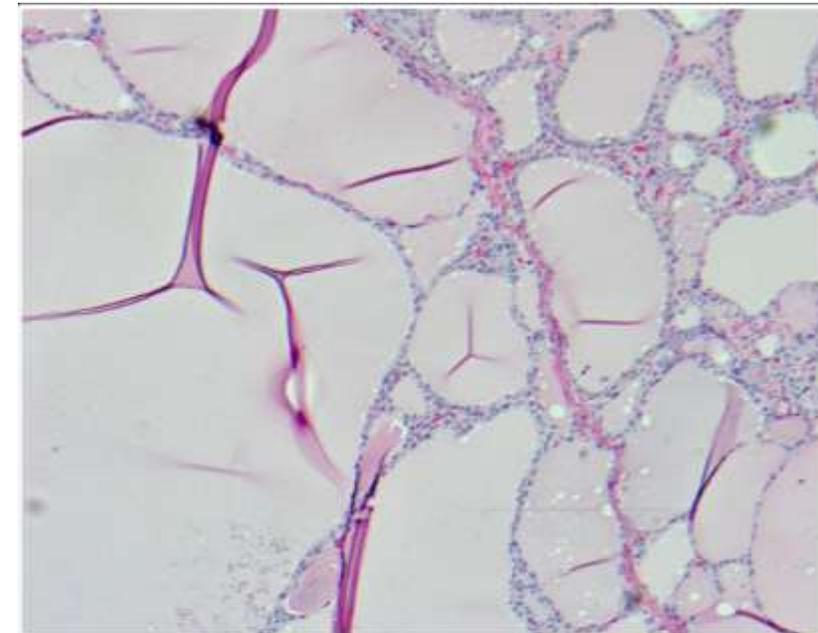
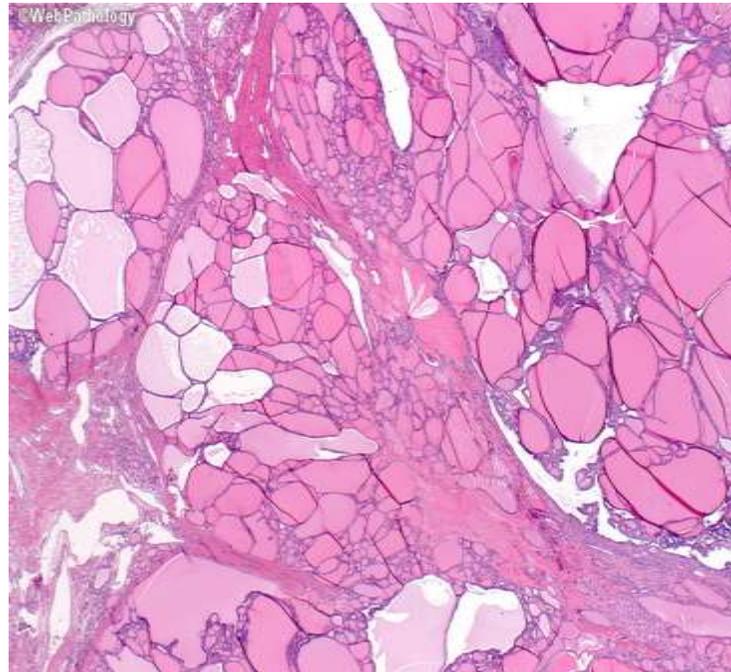
# Morphology, DIFFUSE & MULTINODULAR GOITRE

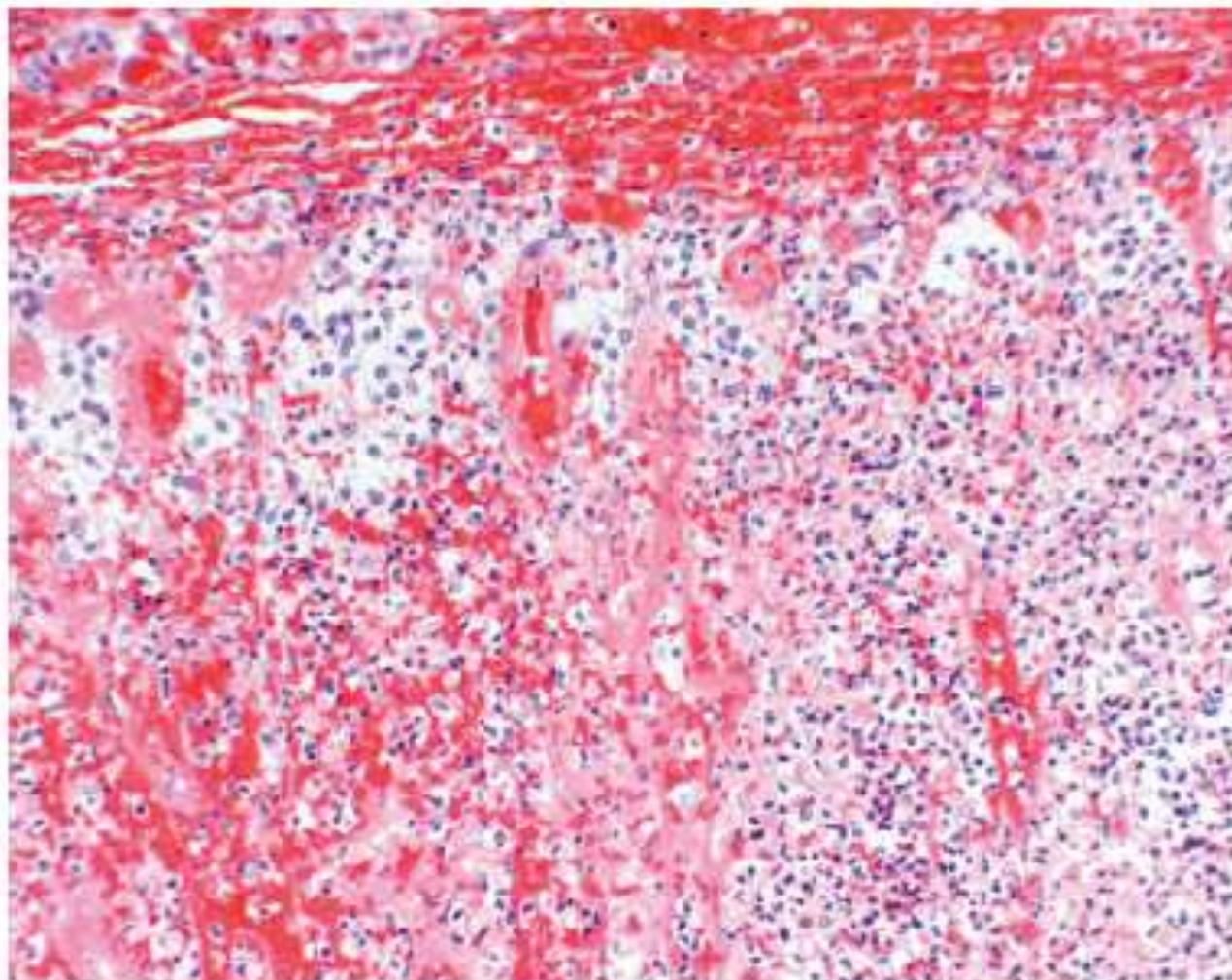
Multinodular goiters are asymmetric, large  
Nodular, bumpy outer surface and variegated cut surface



# Histology

- Variable sized dilated follicles with flattened to hyperplastic epithelium.
- Nodules may be present.





**Figure 19-39** Waterhouse-Friderichsen syndrome. Bilateral adrenal hemorrhage in an infant with overwhelming sepsis, resulting in acute adrenal insufficiency. At autopsy, the adrenals were grossly hemorrhagic and shrunken; in this photomicrograph, little residual cortical architecture is discernible.

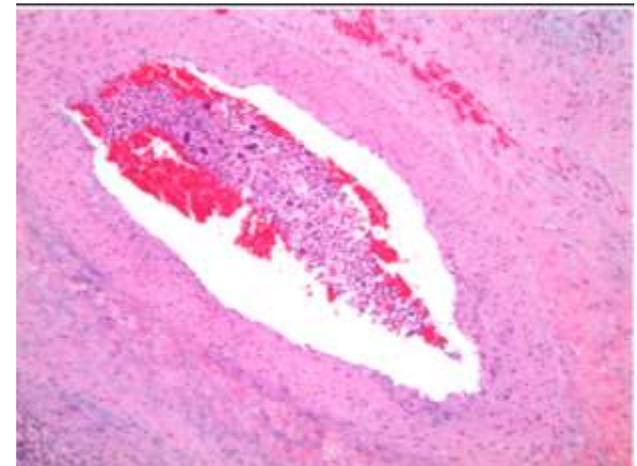
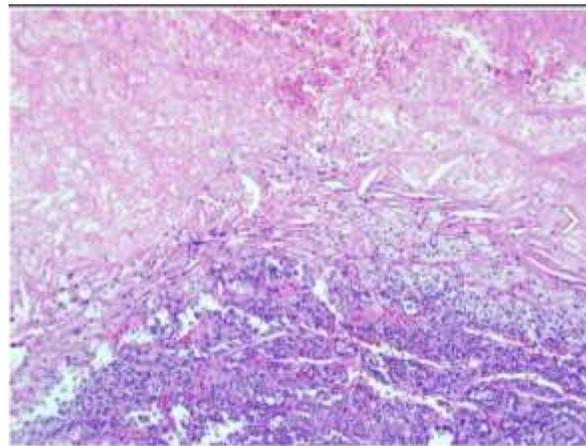
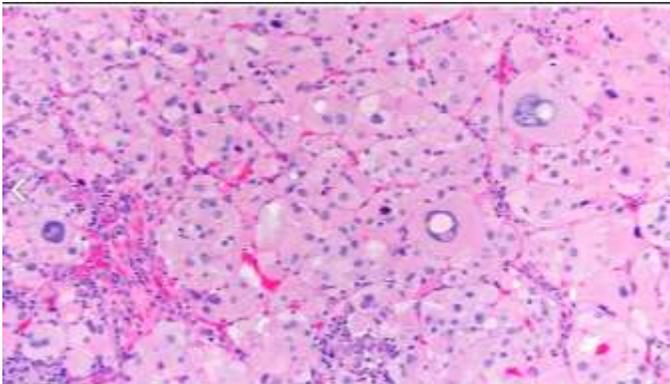
# Morphology, adrenocortical ca

- Encapsulated , usually yellow color: single or multiple.
- Size variable 1-2 cm. Up to large tumors
- Malignant tumors may show necrosis, hemorrhage and are usually larger.



# Histology

- Encapsulated tumor composed of variably sized nests, large sheets and trabeculae
- Invasion of thick fibrous capsule
- Lymphovascular invasion (venous or sinusoidal)
- Areas of necrosis, hemorrhage, degeneration are common



# Morphology

- **well circumscribed, small to large in size**



# Histology

- Nested (zellballen), trabecular patterns.
- **Nests of cells (Zellballen) with abundant cytoplasm filled with granules containing catecholamine.**
- **Malignancy confirmed by METASTASES**

