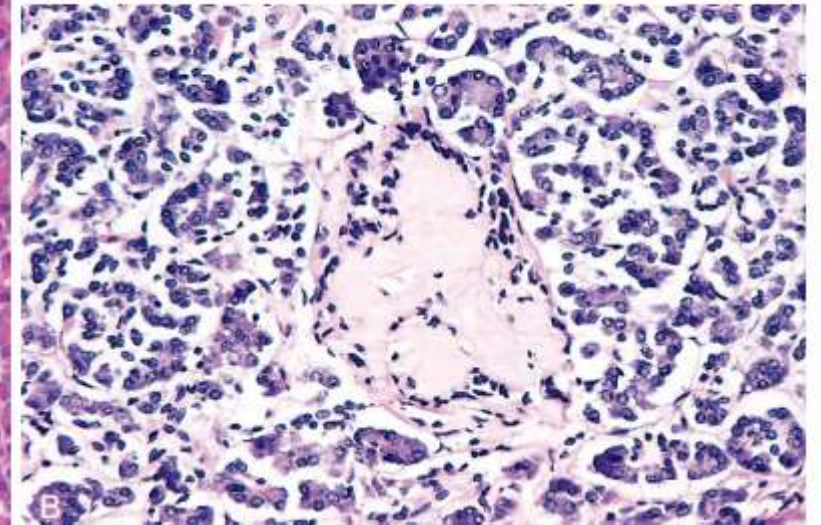
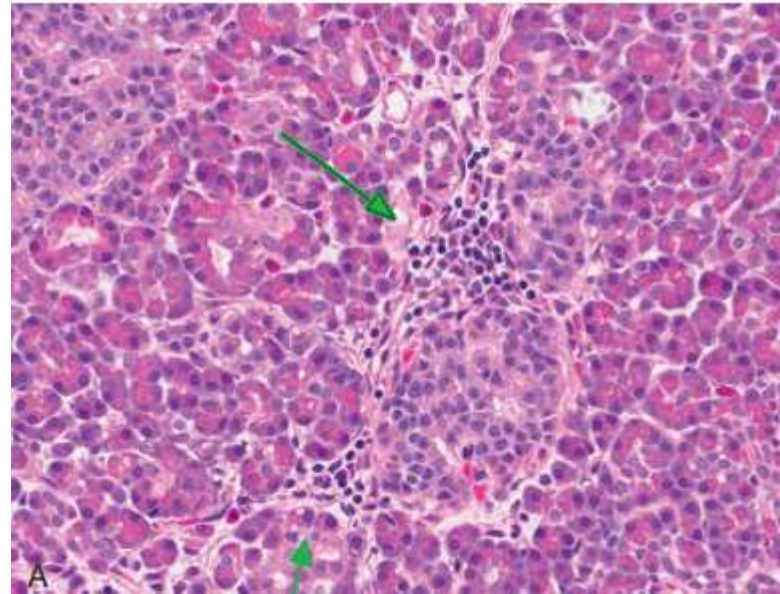


endocrine system
Patho lab 2

MORPHOLOGY

Diabetes

- Reduction in the number and size of islets.
- Leukocytic infiltrates in the islets.
- Amyloid deposition within islets in type 2 diabetes. *secreted w/ Insulin normally*

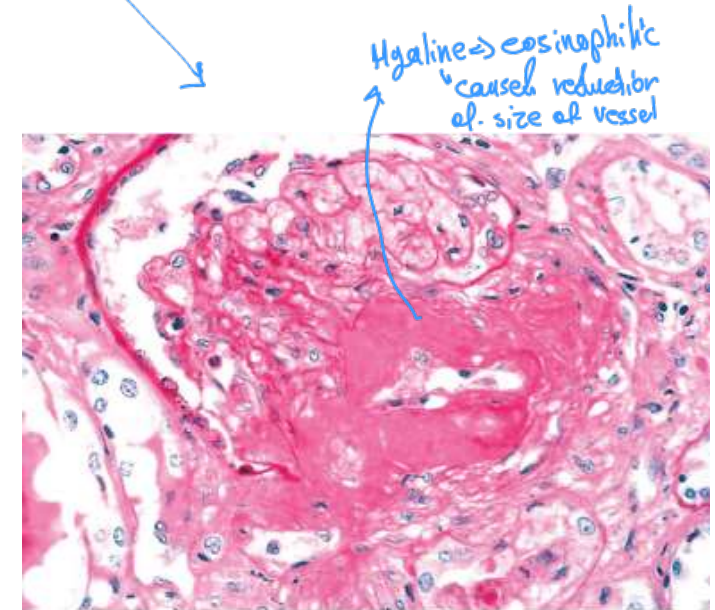
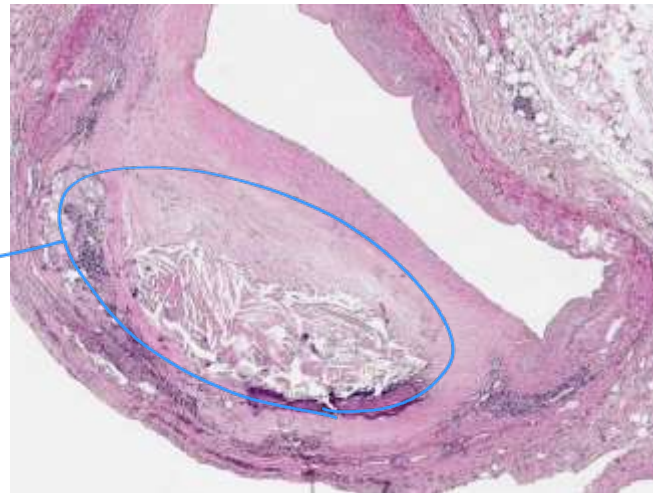


Morphology cont.

Complications of diabetes

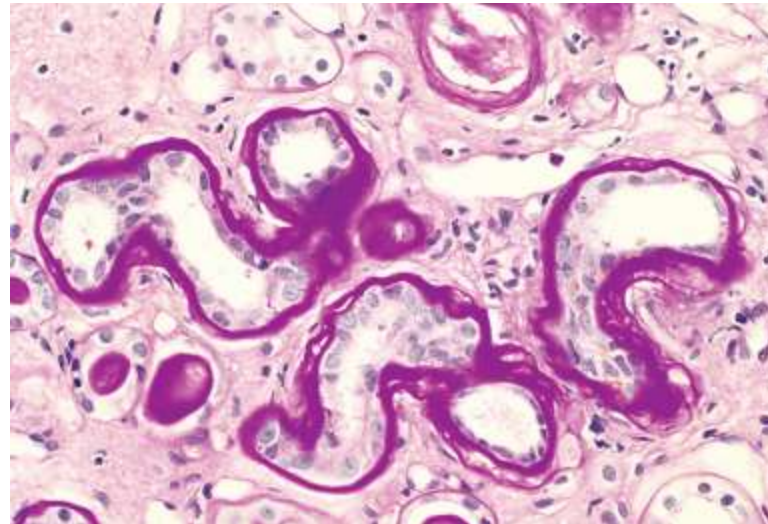
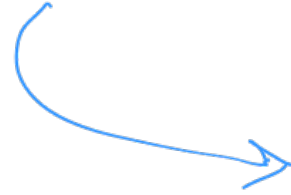
- Diabetic macrovascular disease. The hallmark of diabetic macrovascular disease is accelerated atherosclerosis.
- Hyaline arteriosclerosis. \Rightarrow mainly involving renal artery

Fibrin + Ca^{2+} \leftarrow make of \leftarrow focal expansion because of thrombus!

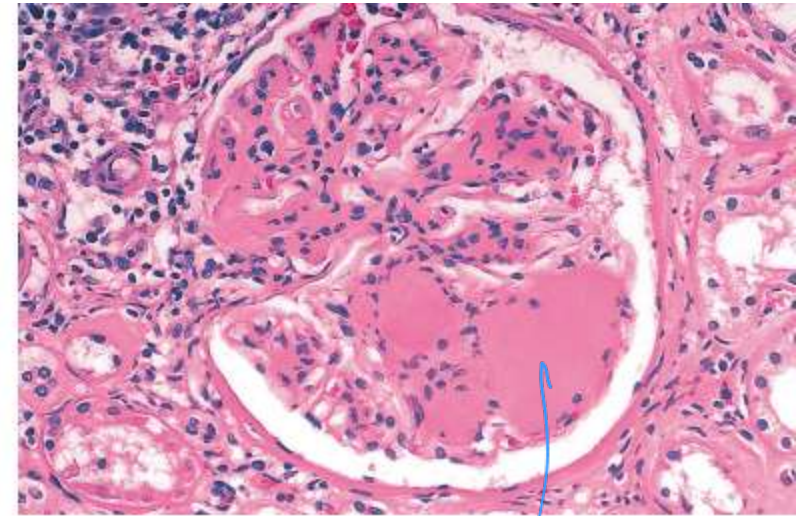


Diabetic nephropathy.

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



Renal cortex showing thickening of tubular basement membranes .



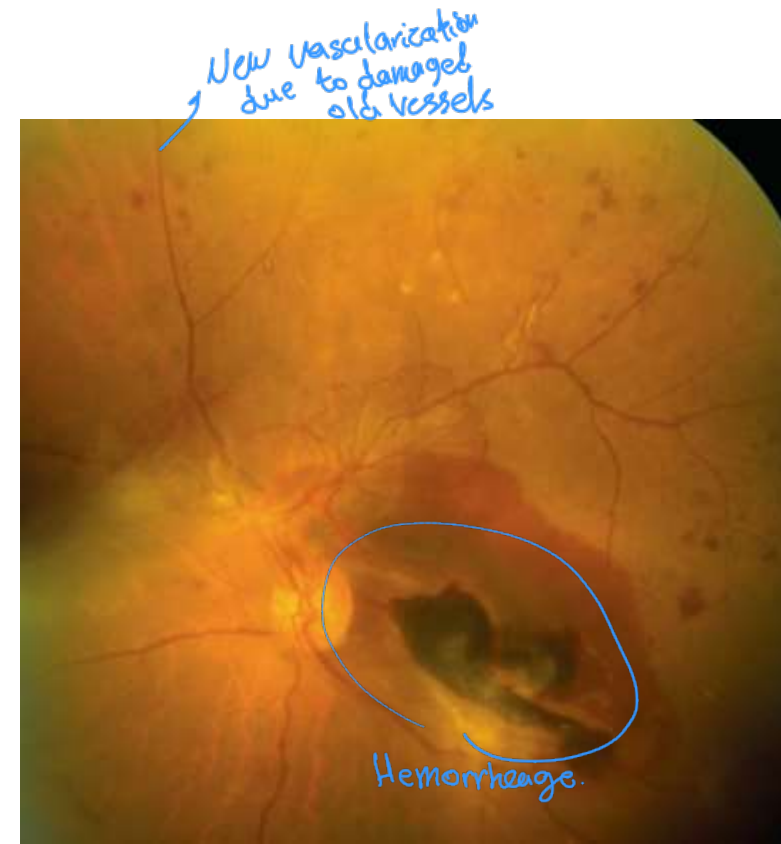
Nodular glomerulosclerosis

Renal Failure Finally! ← Replaced by Abnormal substance eosinophilic

diabetic retinopathy

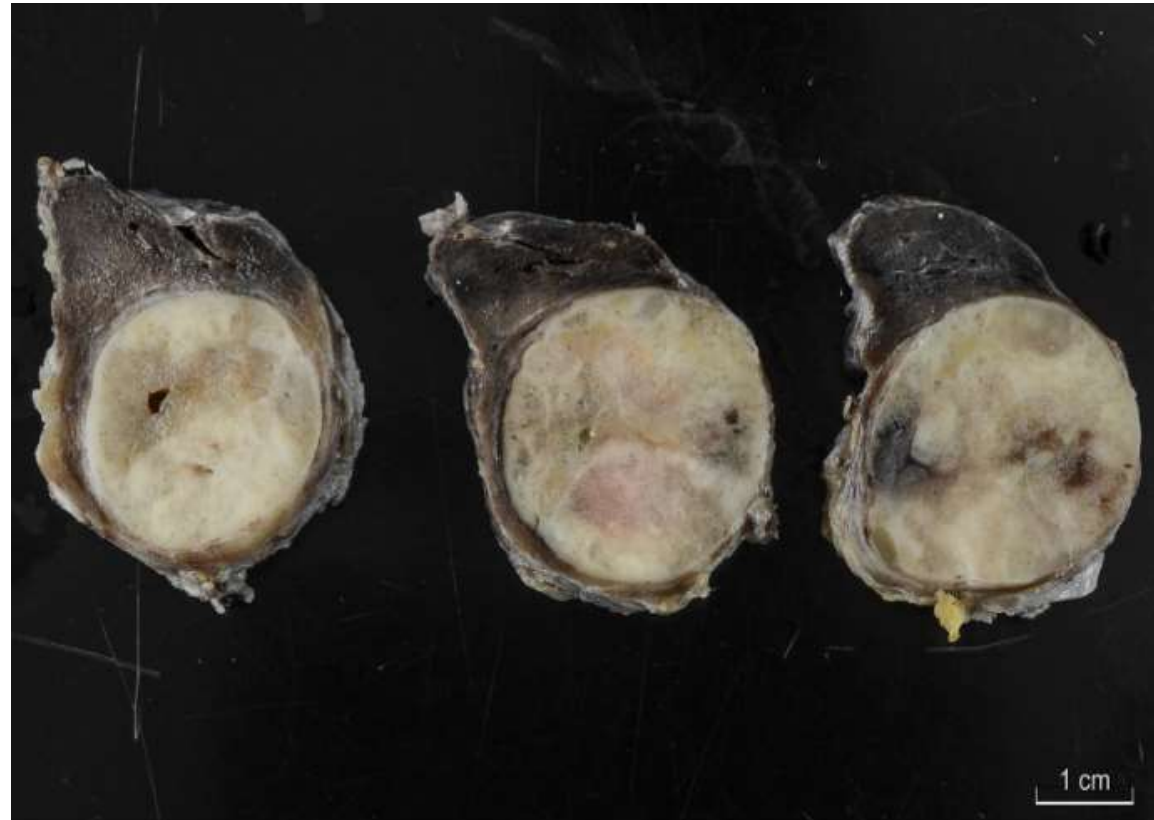
- Features include:
 - ✓ advanced proliferative retinopathy.
 - ✓ retinal hemorrhages.
 - ✓ Exudates.
 - ✓ neovascularization.
 - ✓ tractional retinal detachment

damages the retina
leads to
تلف الشبكية



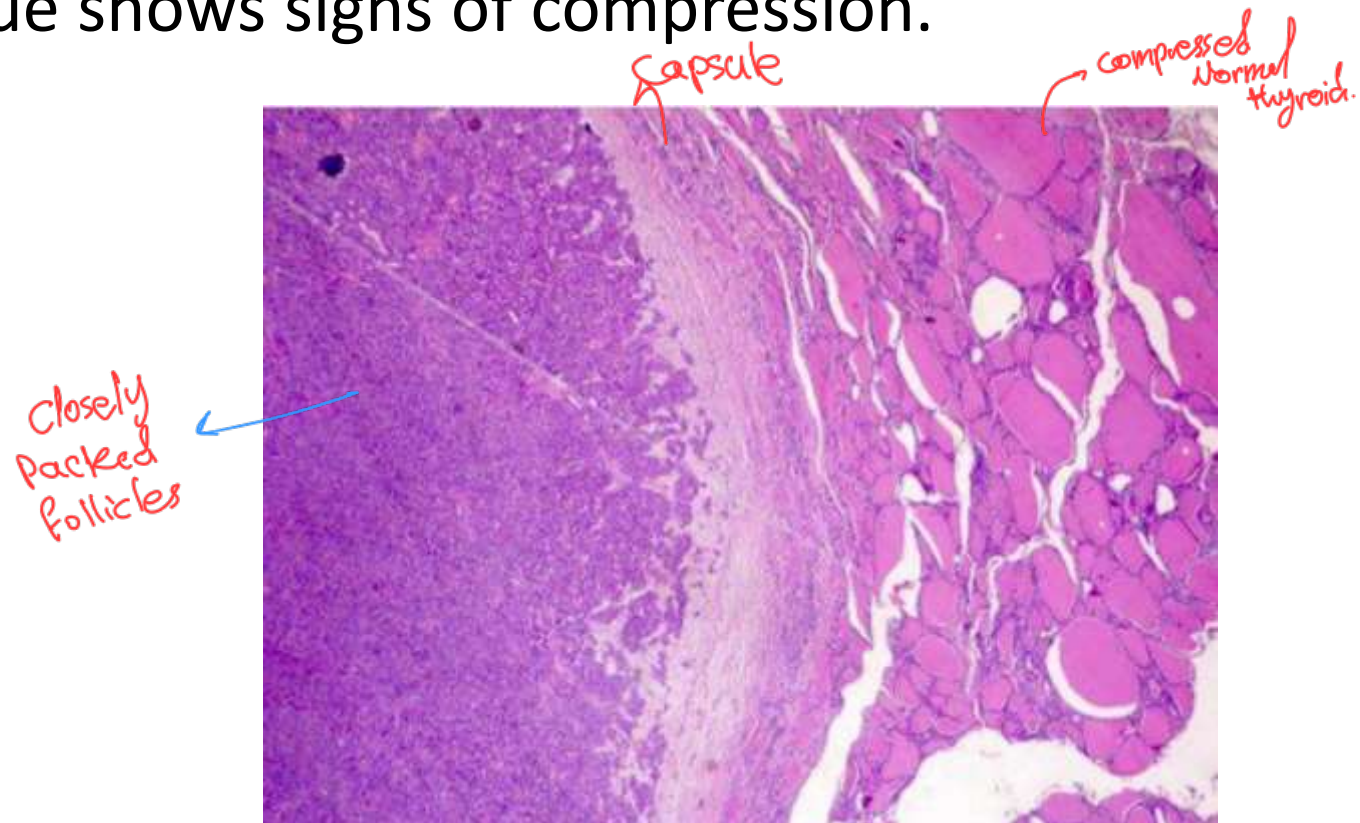
Morphology, adenoma

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



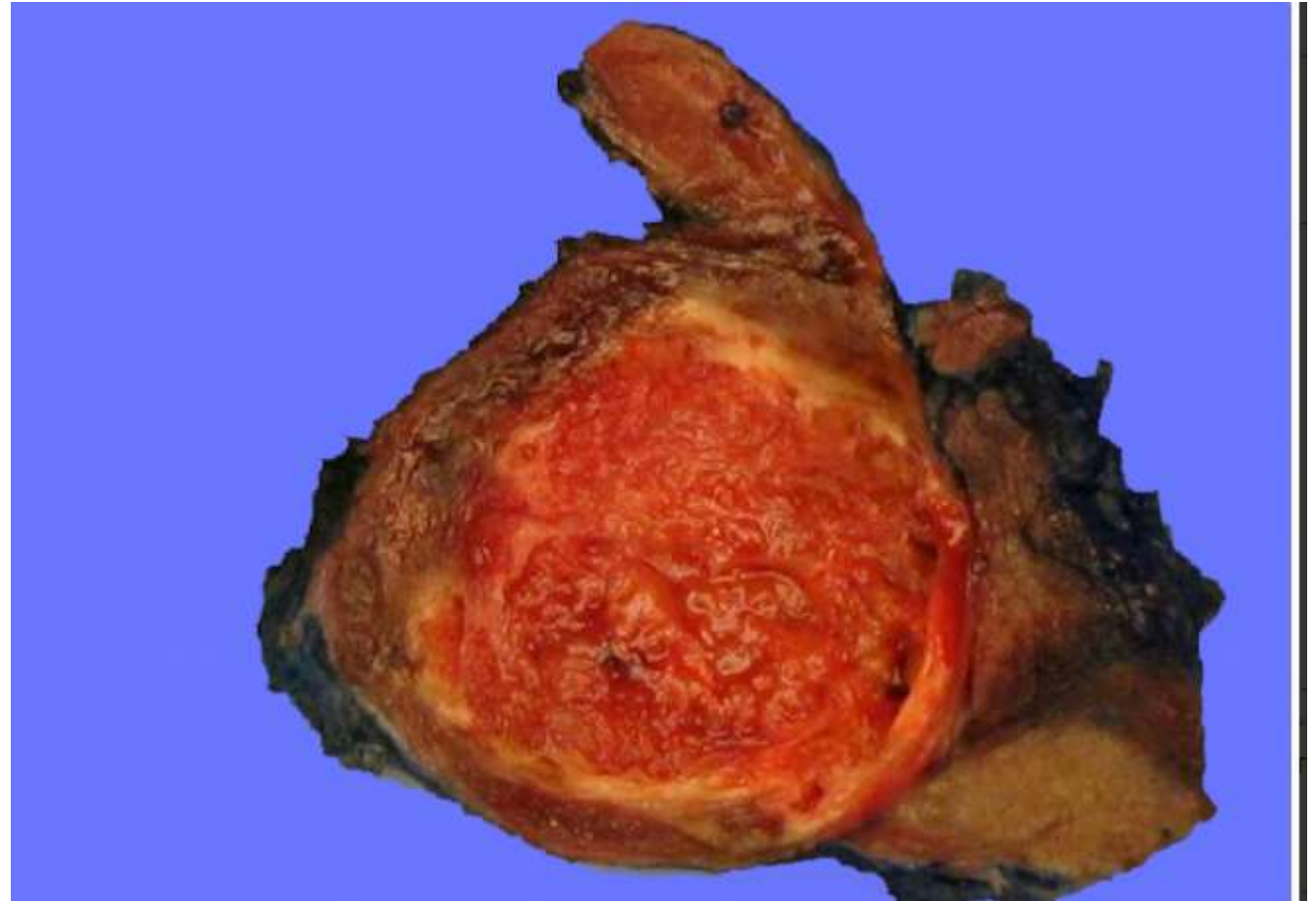
Histology

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



Morphology. PTC *Papillary Thyroid Carcinoma*

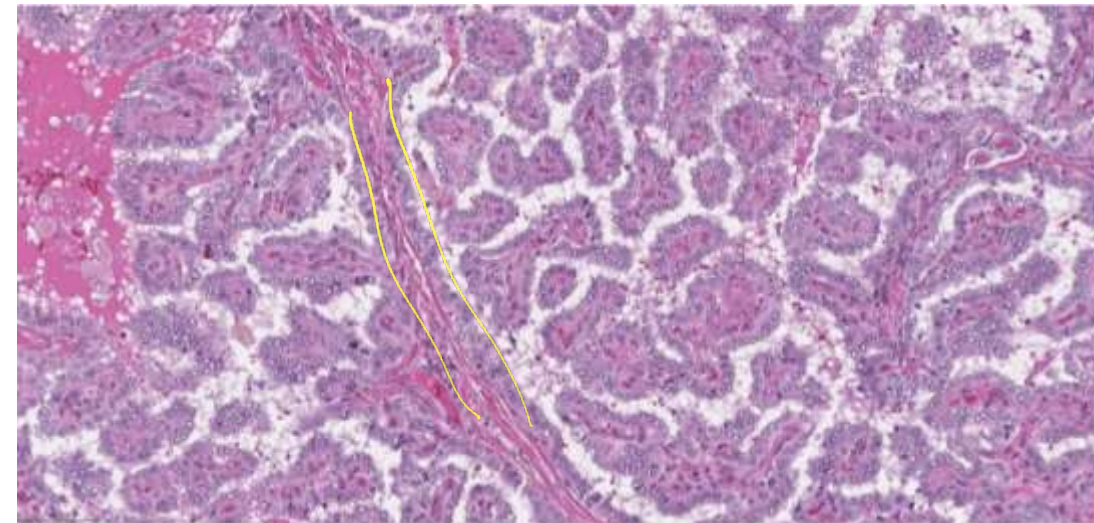
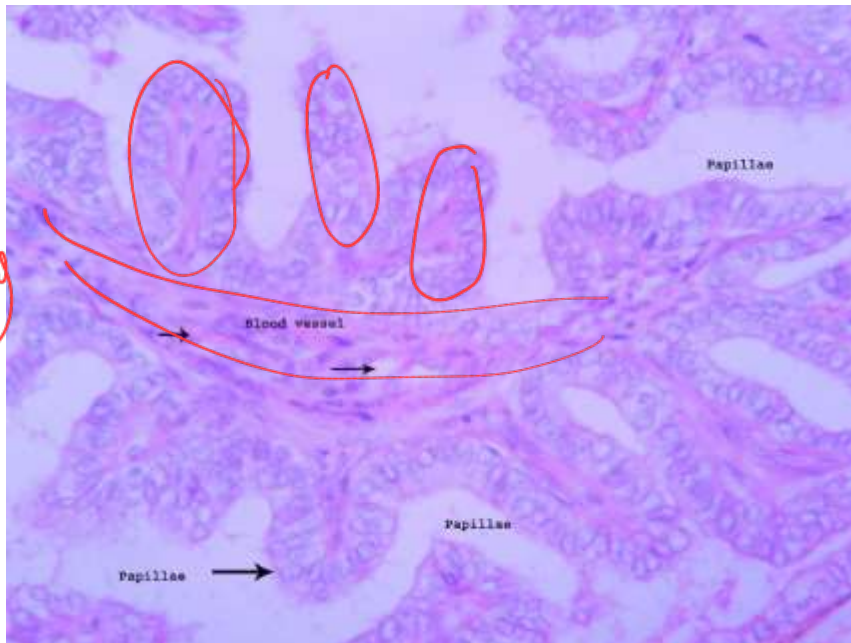
- Solid or cystic mass with papillary projections



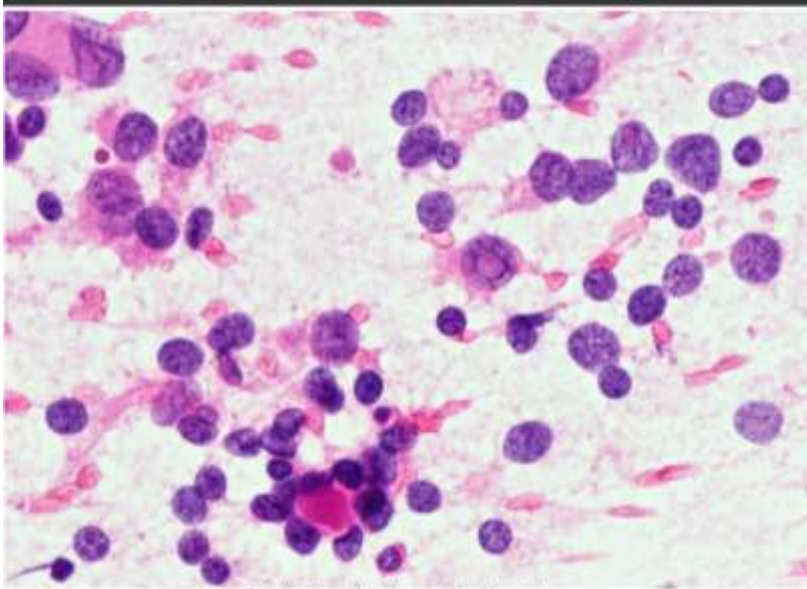
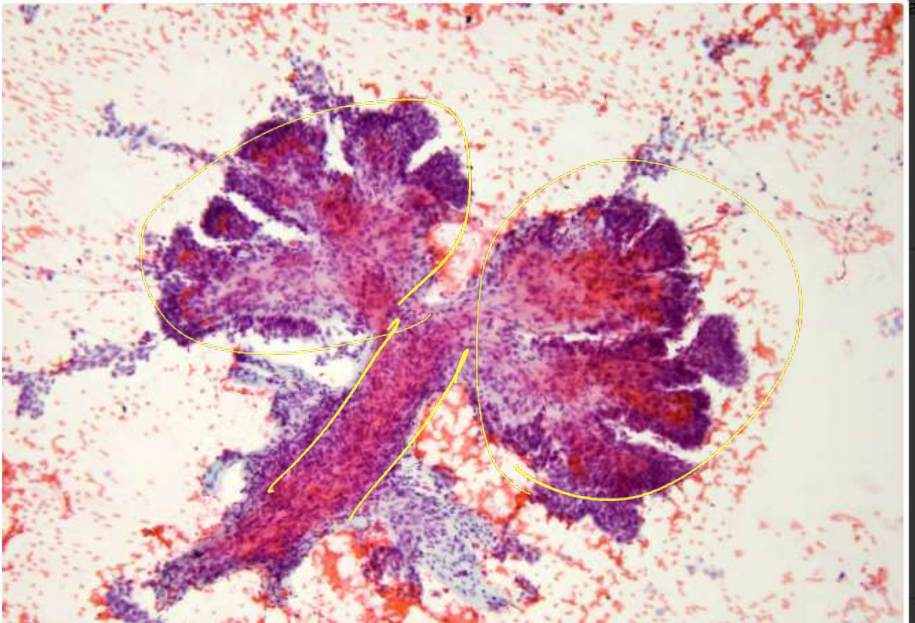
Histology.

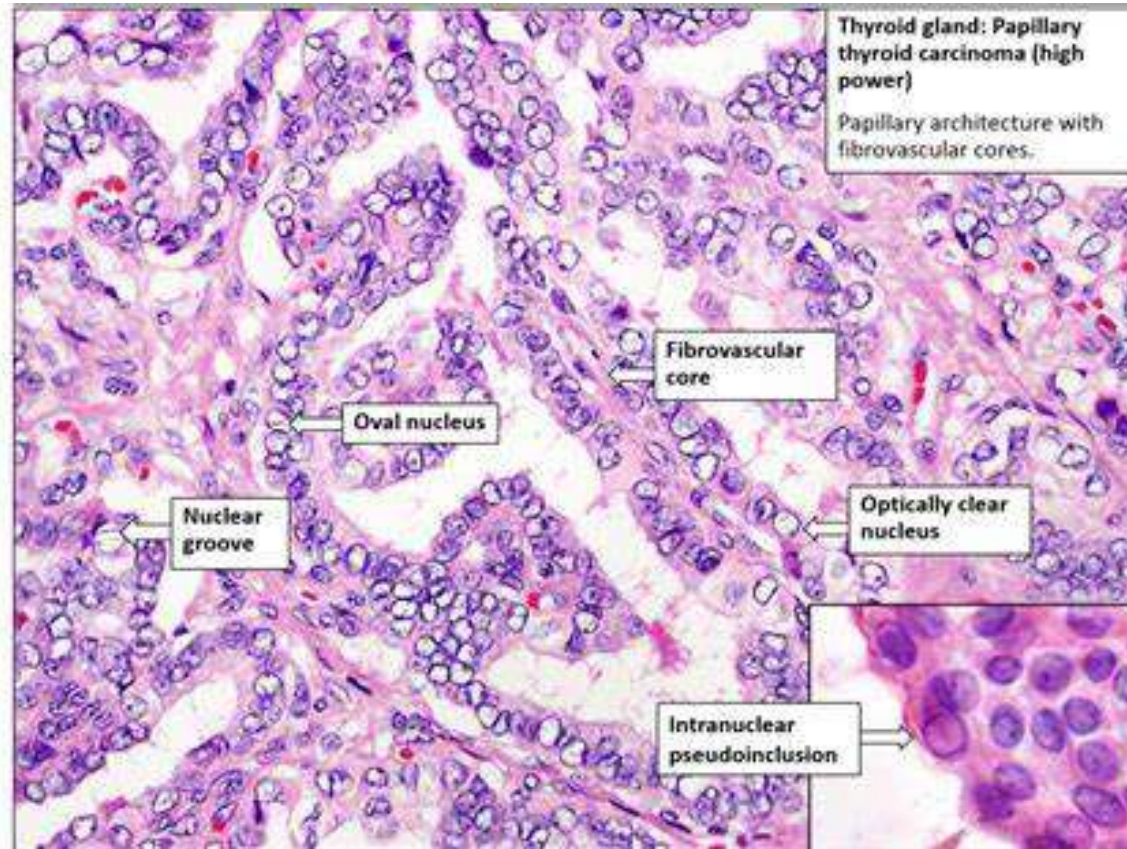
- Defined by two cardinal features:
 - ✓ true papillae with a fibrovascular core.
 - ✓ nuclear features of papillary carcinoma.

central
blood vessel
w/ tumor
cells surrounding
it



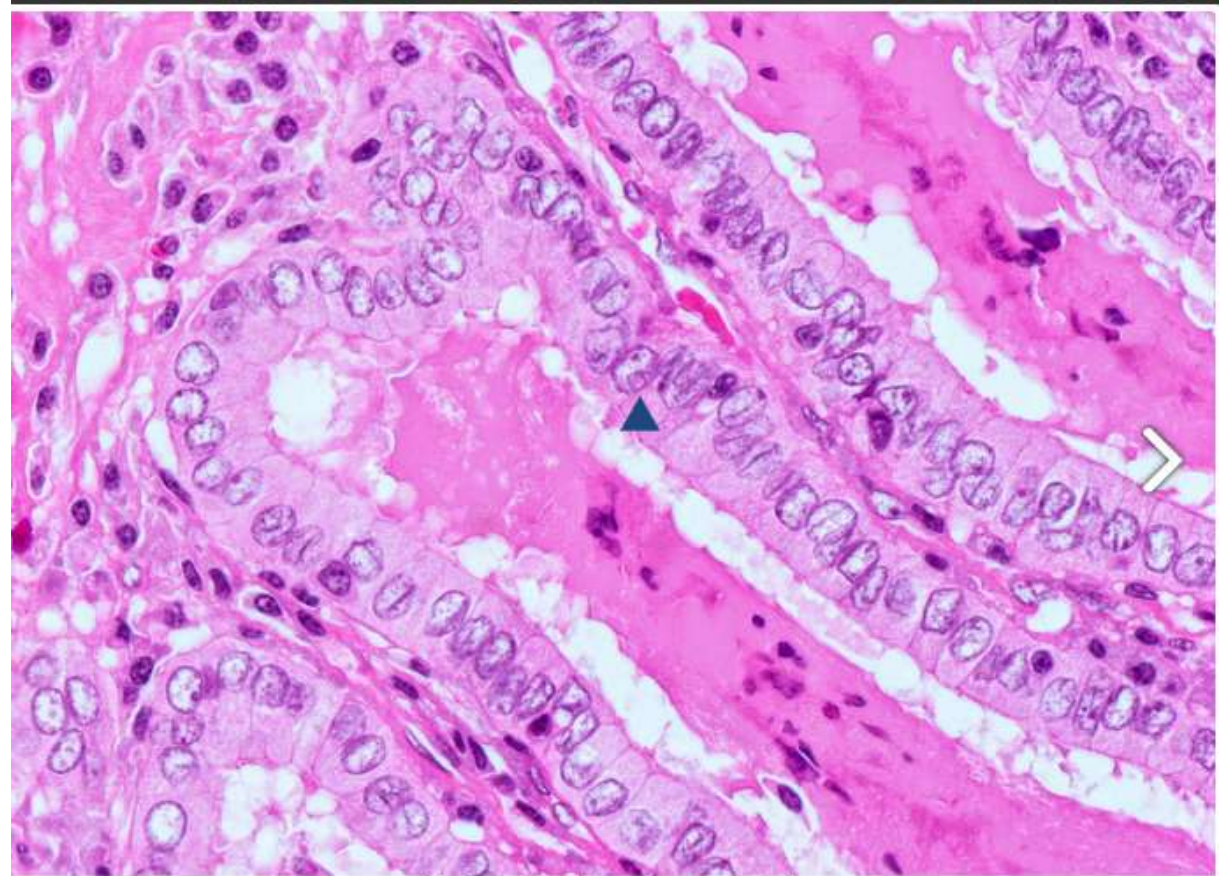
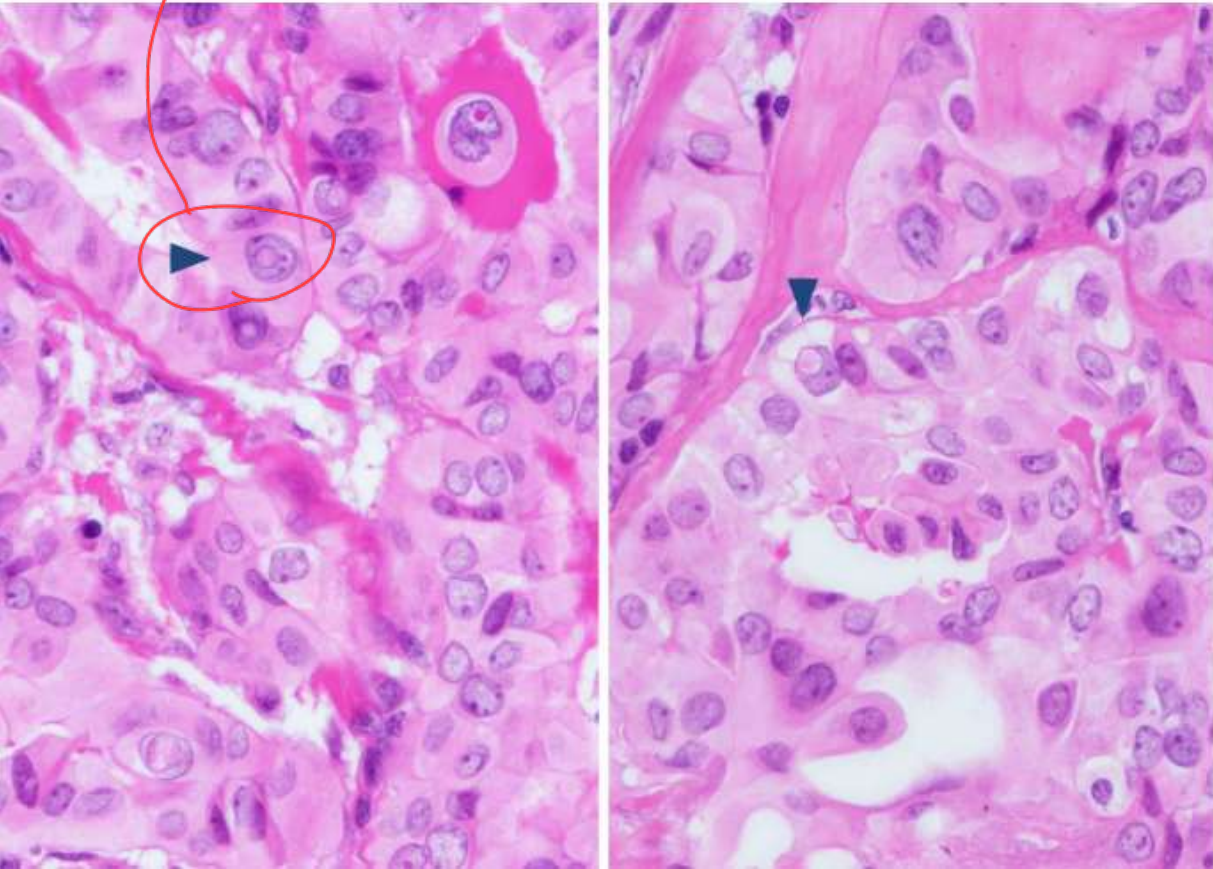
ultrasound guided pre-operative fine needle aspiration cytology.





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

Nuclear
Pseudo-inclusion.

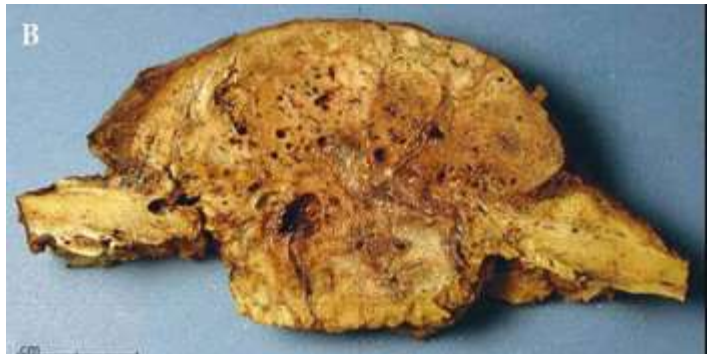


Papillary thyroid carcinoma nuclei:

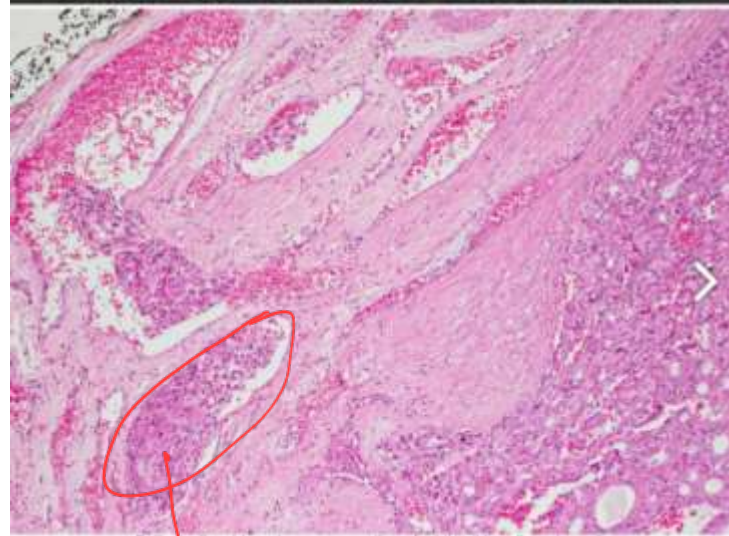
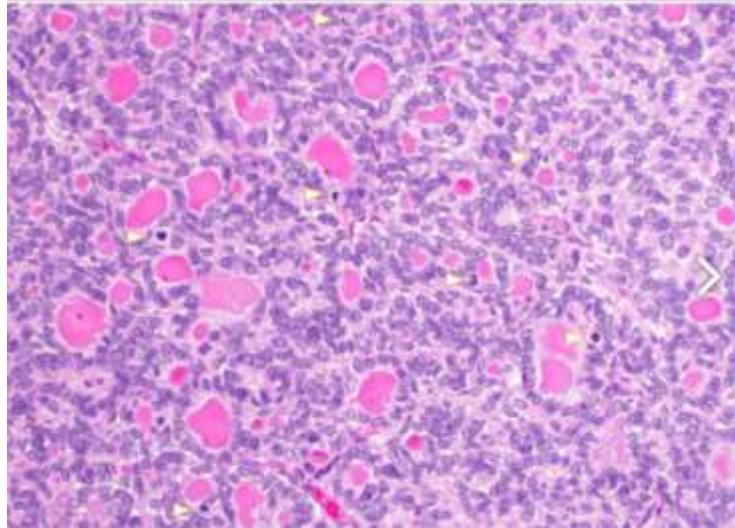
Morphology FOLLICULAR CARCINOM, A

- 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.

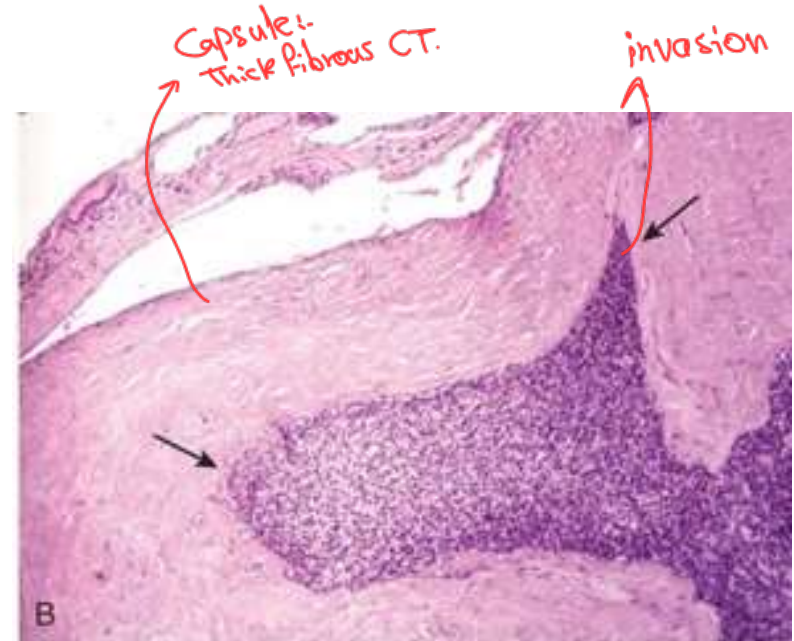
← لا تترك
عليه



Follicular lesion w/ no papillae.

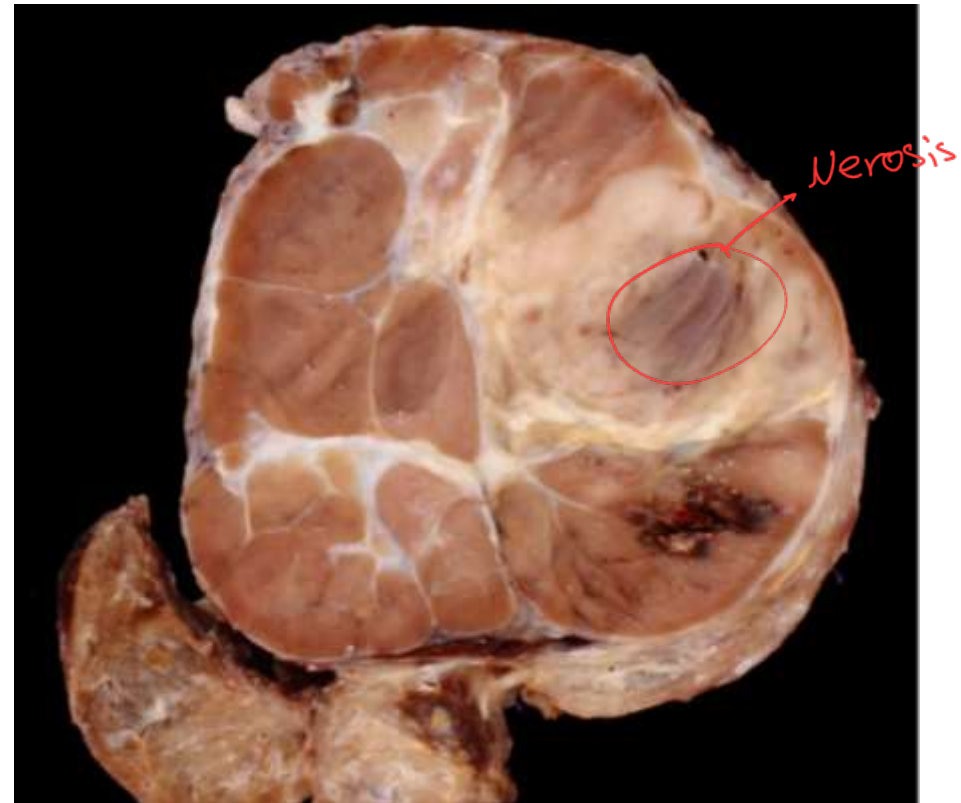


RBC's



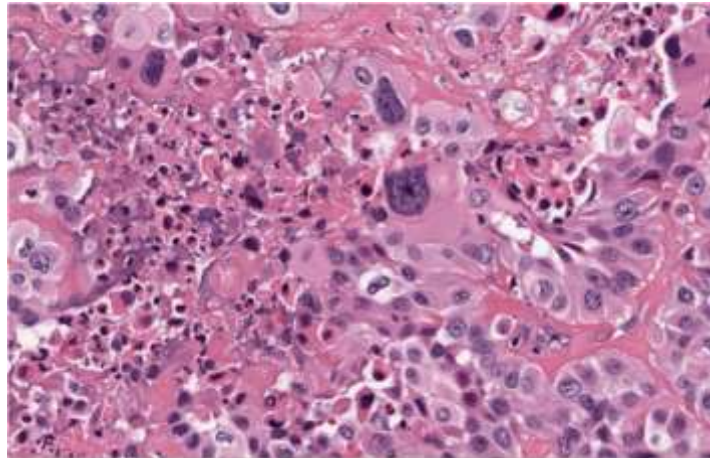
Morphology, ANAPLASTIC CA

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



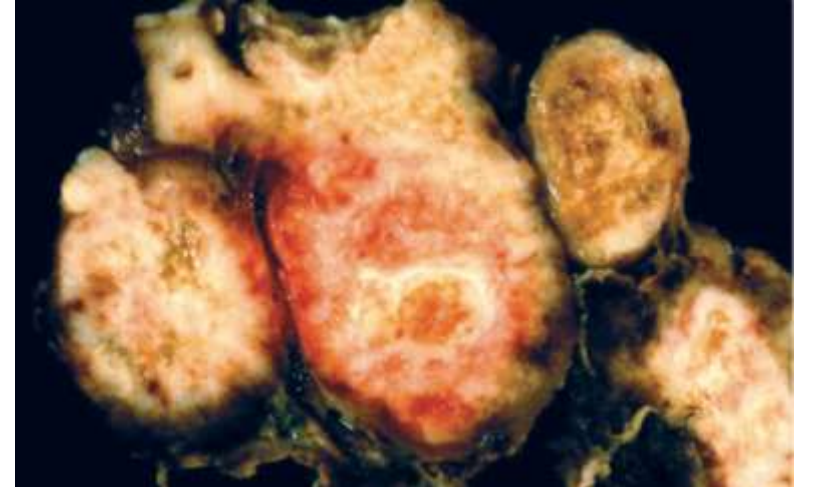
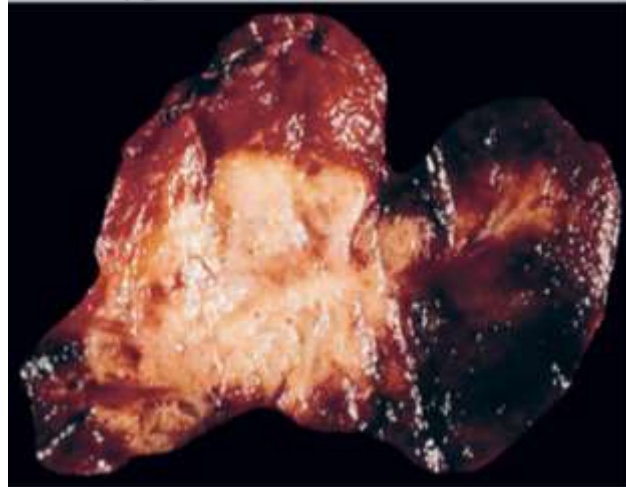
Histology

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

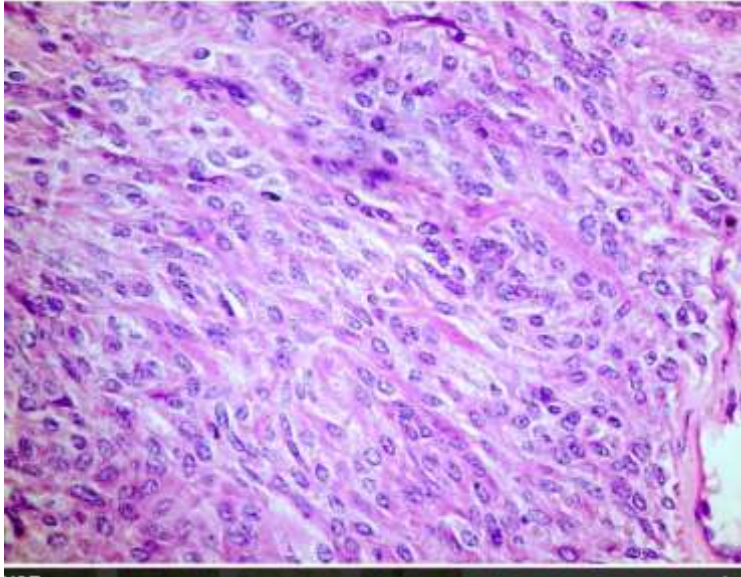


Morphology, MEDULLARY CA

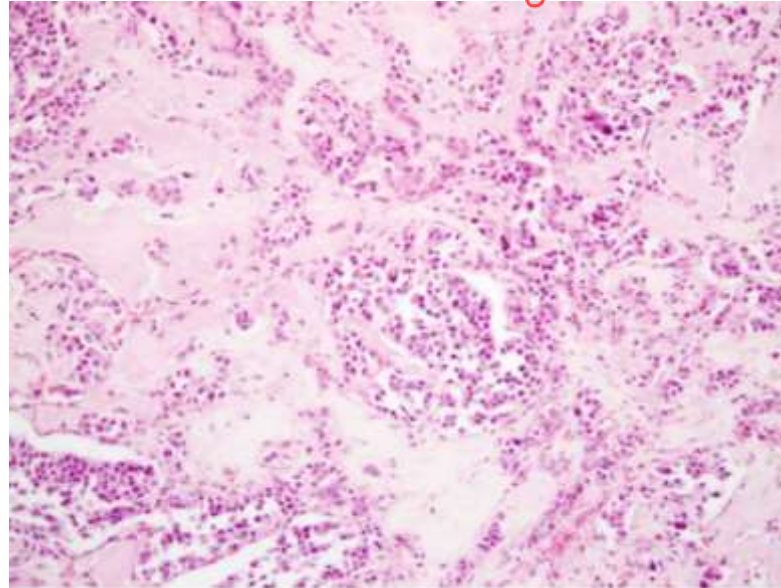
- **Sporadic**: typically presents as a single circumscribed but nonencapsulated, gray-tan mass
- **Familial**: generally bilateral / multiple foci.



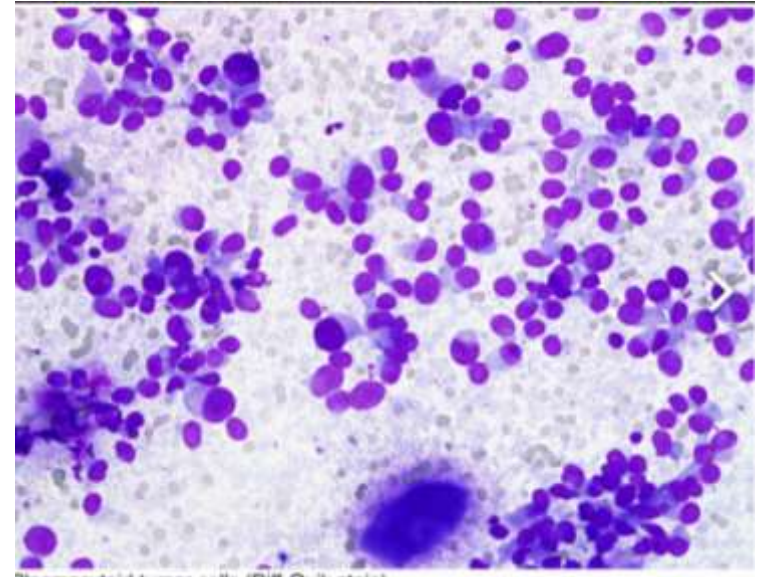
Spindle cells



Deposition of amyloid

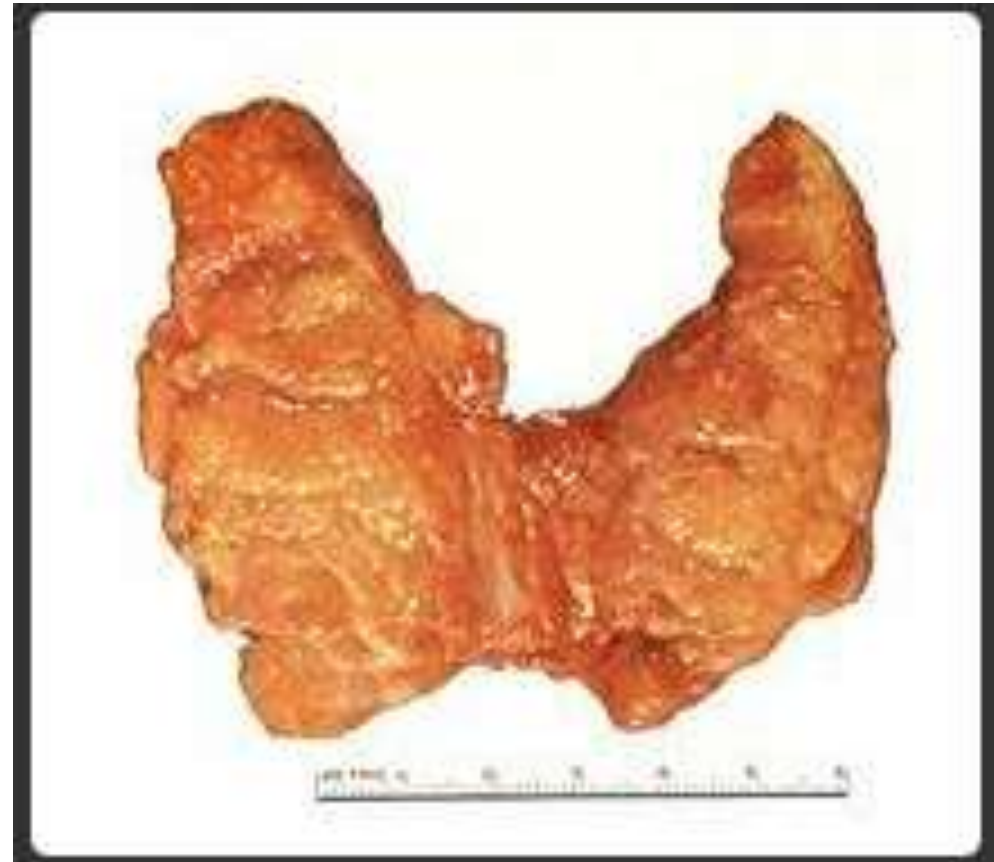


looks like plasma cytoid



Morphology, Hashimoto

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

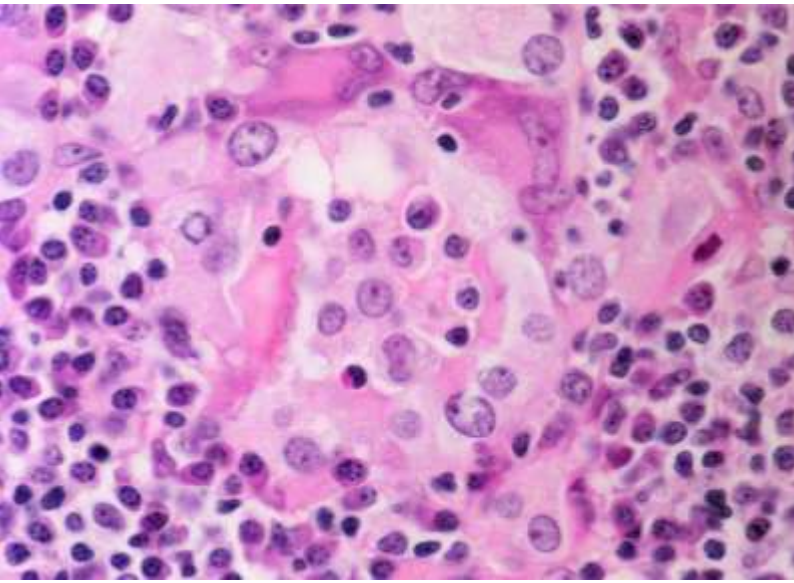
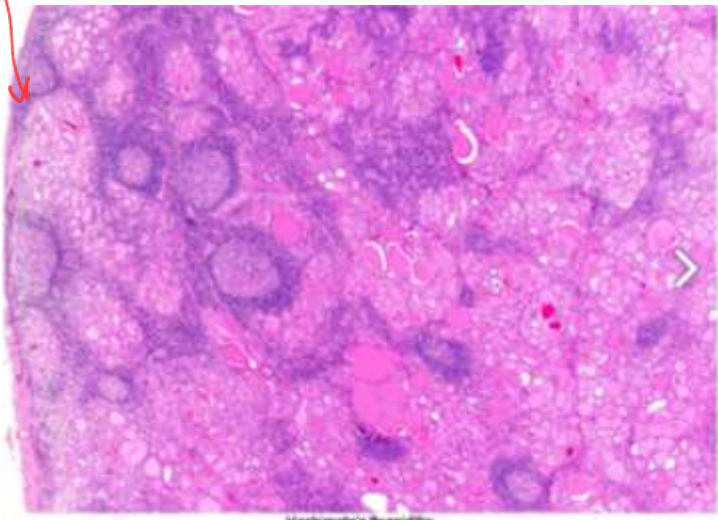


Microscopic

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

Hashimoto Thyroiditis
⇒ when we expect a sample from thyroid ⇒ extensive bleeding!
why? O₂ deprived cells! / Friable lesion.

⇒ Enlarged cell + Nucleus
cytoplasm → granular + eosinophilic
+ Abnormal mitochondria

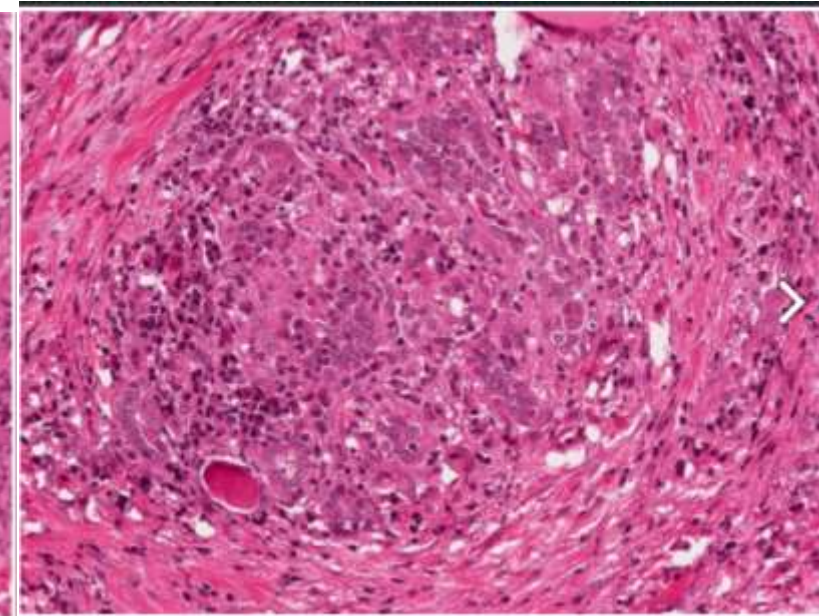
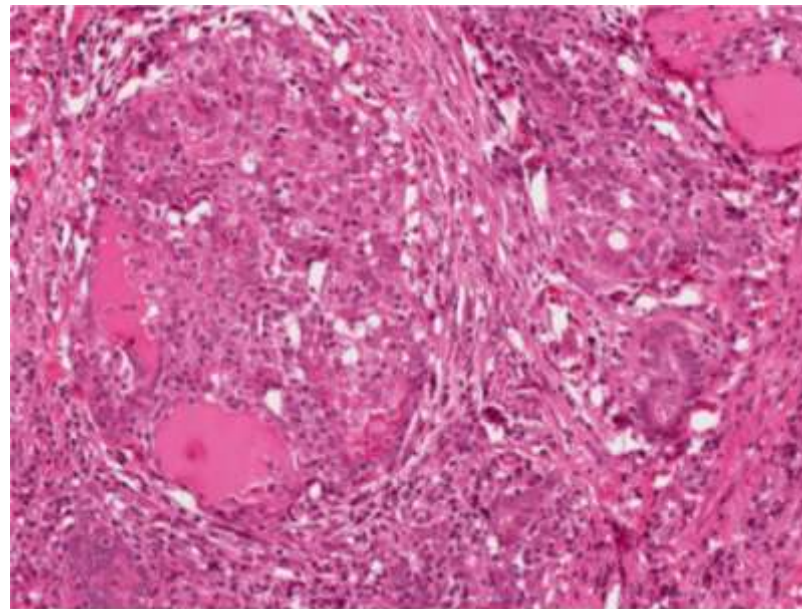


Morphology, de Quervain Thyroiditis

التهاب الغدة
Painful

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

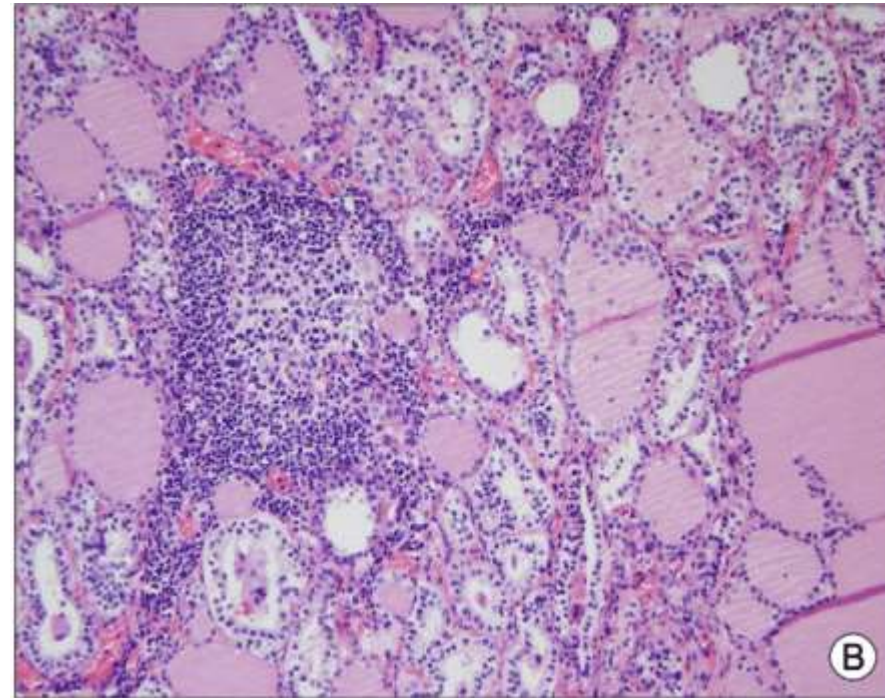
granuloma



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

Morphology

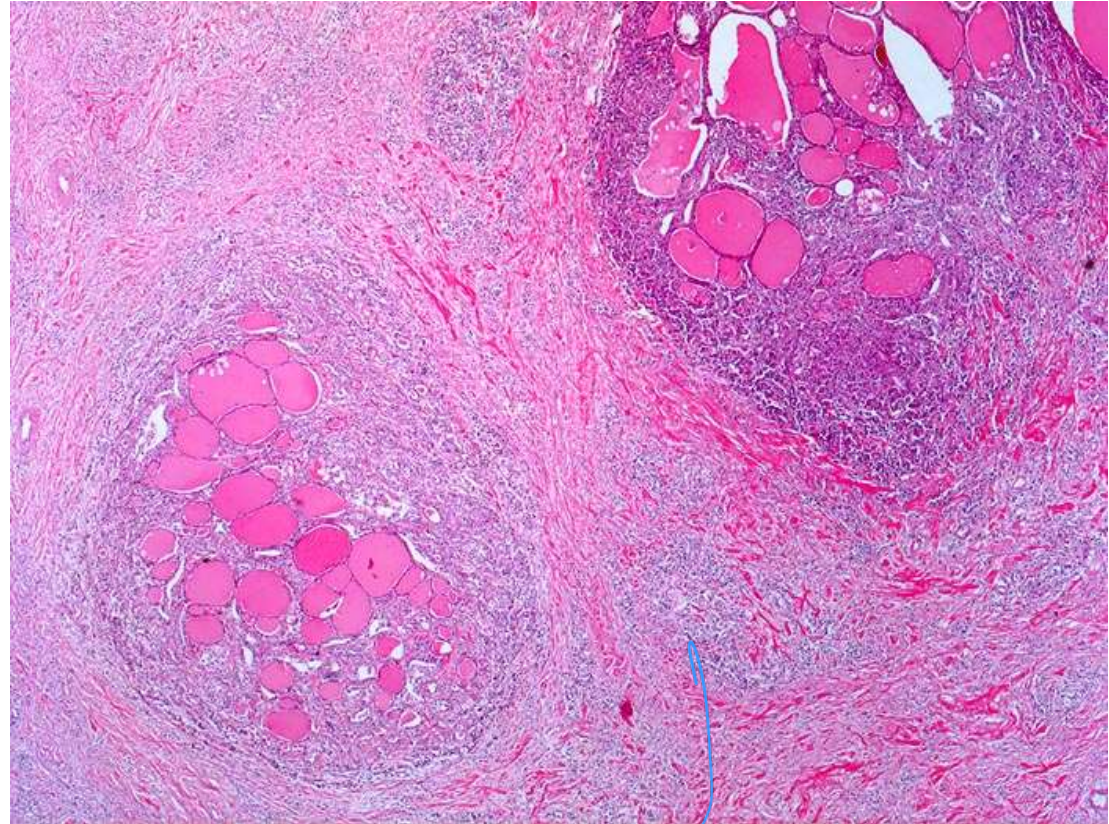
SUBACUTE LYMPHOCYtic THYROIDITIS : (Silent



**Morphology, Reidel's Thyroiditis

Follicles are obliterated or compressed by extensive dense fibrous tissue

Clinically ⇒ Resembles Carcinoma



dense fibrosis

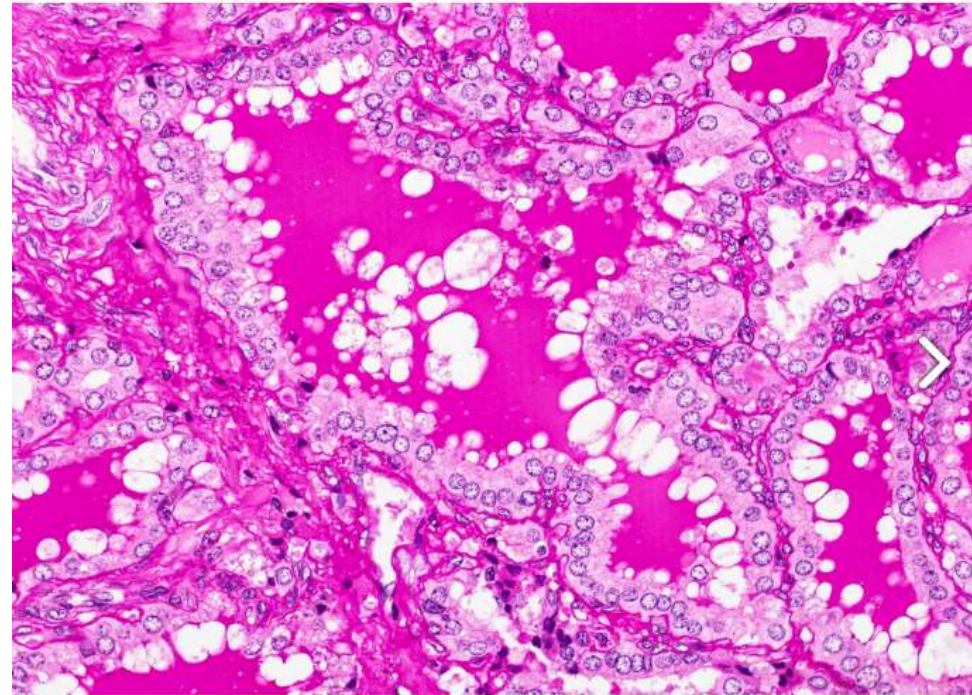
Morphology. GRAVE'S DISEASE

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



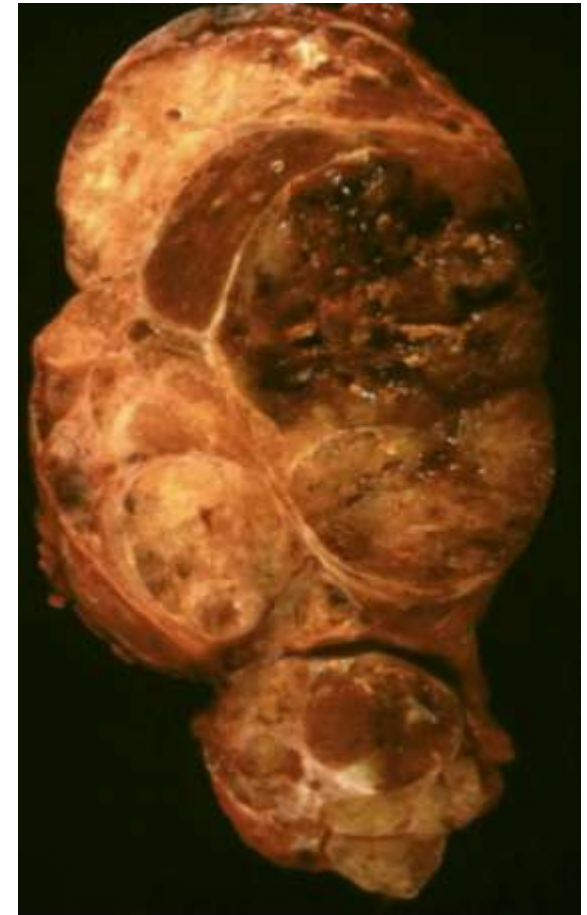
Histology

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



Morphology, DIFFUSE & MULTINODULAR GOITRE

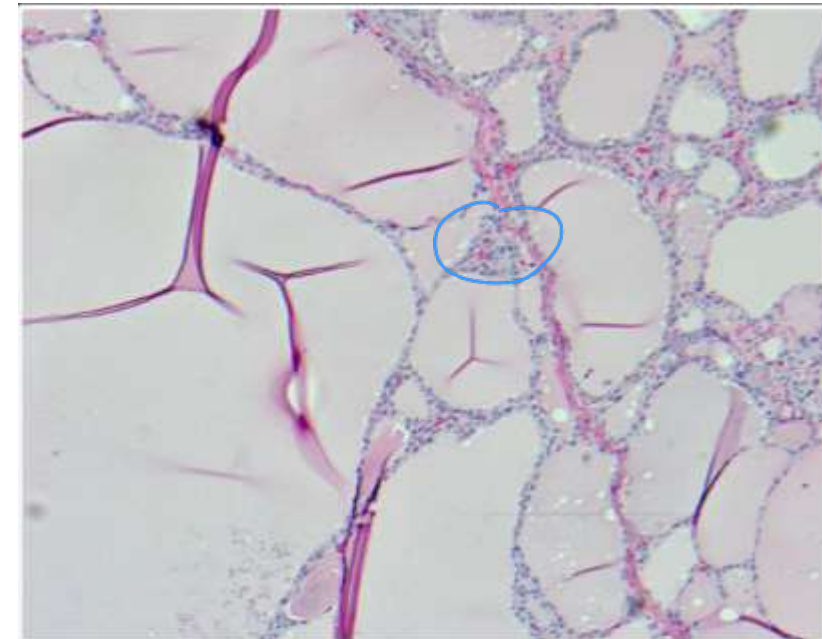
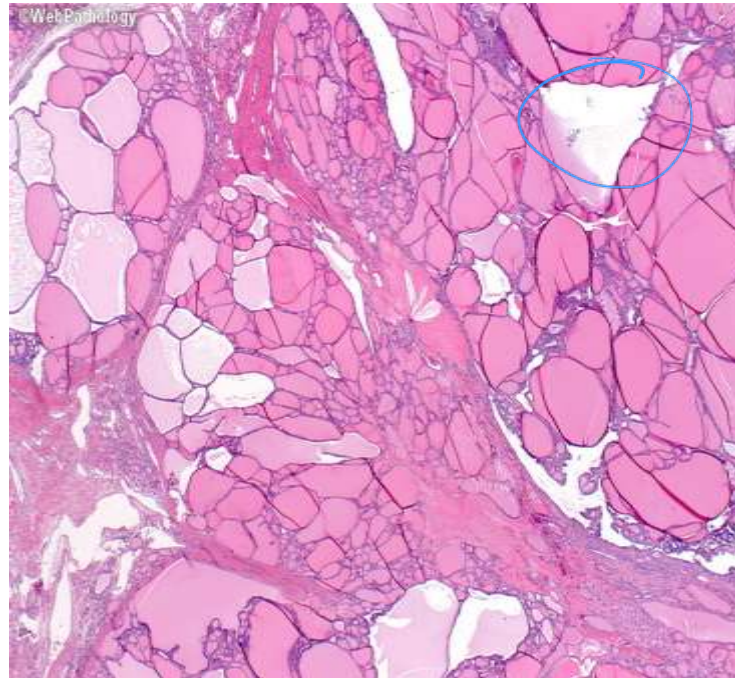
Multinodular goiters are asymmetric, large
Nodular, bumpy outer surface and variegated cut surface



Histology

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

End



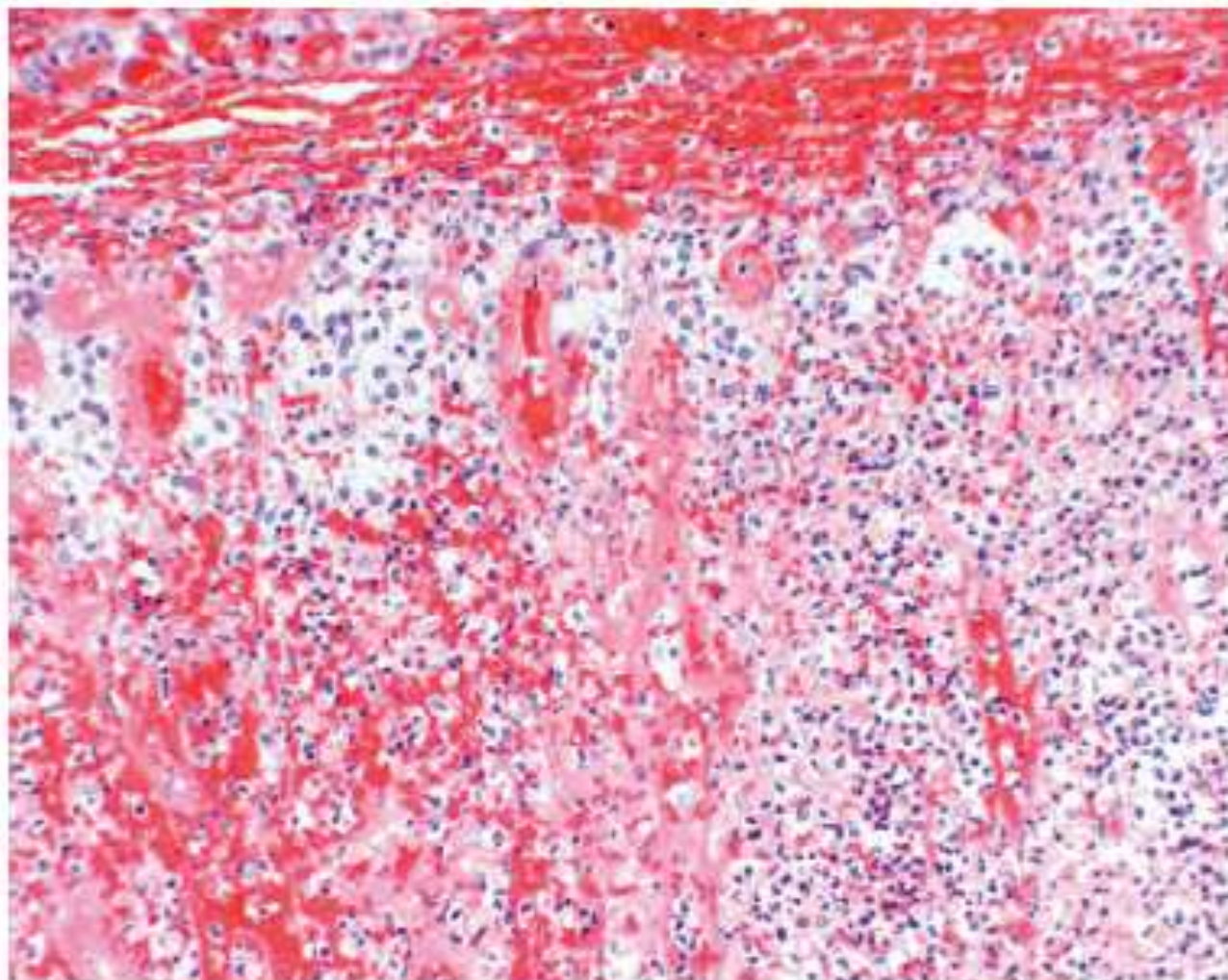
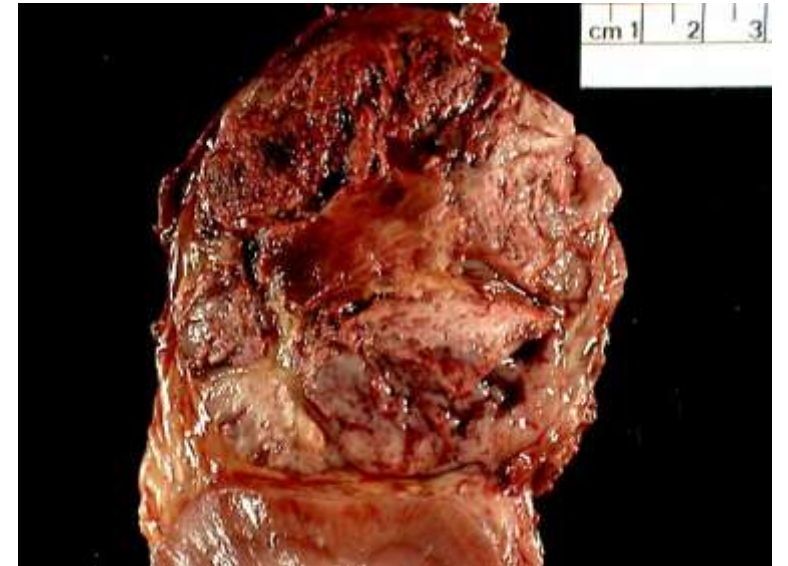


Figure 19-39 Waterhouse-Friderichsen syndrome. Bilateral adrenal hemorrhage in an infant with overwhelming sepsis, resulting in acute adrenal insufficiency. At autopsy, the adrenals were grossly hemorrhagic and shrunken; in this photomicrograph, little residual cortical architecture is discernible.

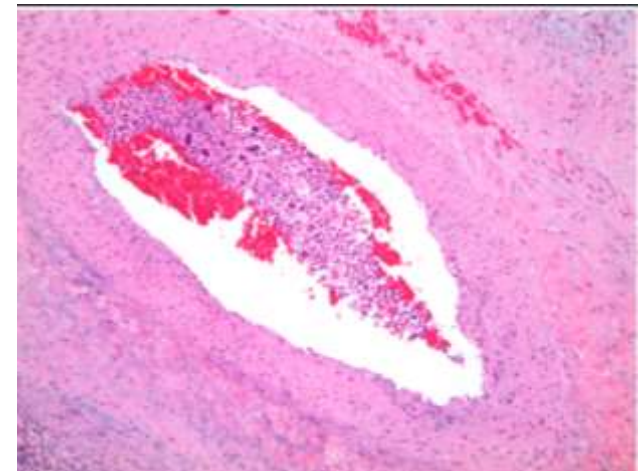
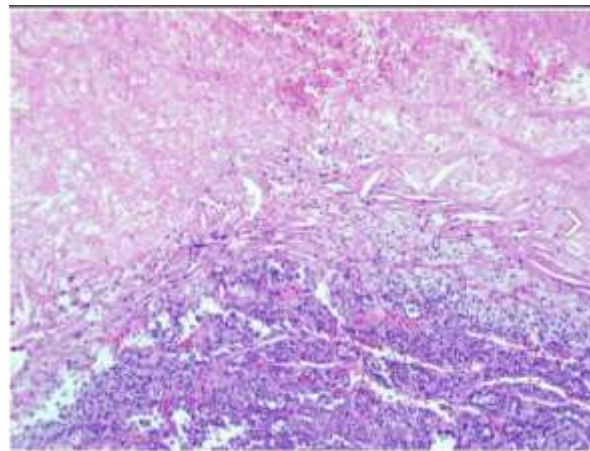
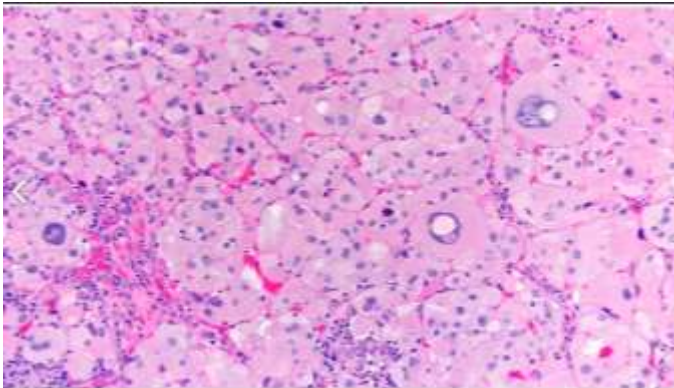
Morphology, adrenocortical ca

- 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.



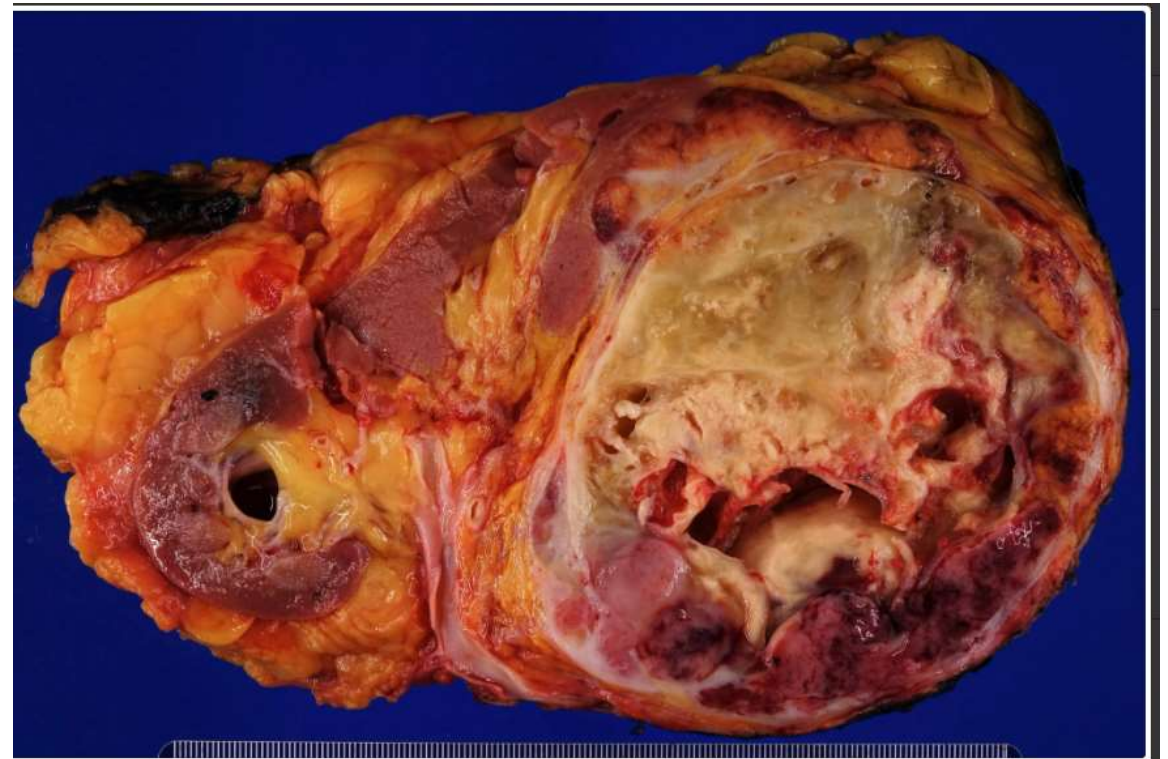
Histology

- 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**

