



Thyroid pathology Practical part

My Algorithm

- ❑ After a good macroscopy and a microscopic overview of the lesion, I especially look at the capsule and the thyroid just above and just beneath the capsule.
- ❑ Capsule: vascular invasion and capsular breakthrough
- ❑ Nodules above are baby nodules or are mushrooms at the edge.

My Algorithm

- ❑ Especially look for PTC nuclei just under the capsule. PTC nuclei are not always present in a diffuse manner. FV PTC Micro PTC, multifocal PTC.
- ❑ PTC nuclei are not always easy to detect
- ❑ Look at scars, calcifications.
- ❑ Neuroendocrine nuclei: Pepper and Salt nuclei.

My Algorithm

- ❑ If thin capsule: No FC
- ❑ If macro-follicular or normo-follicular: No FC
- ❑ Small dark nuclei or all cleared nuclei: No PTC

Case 1

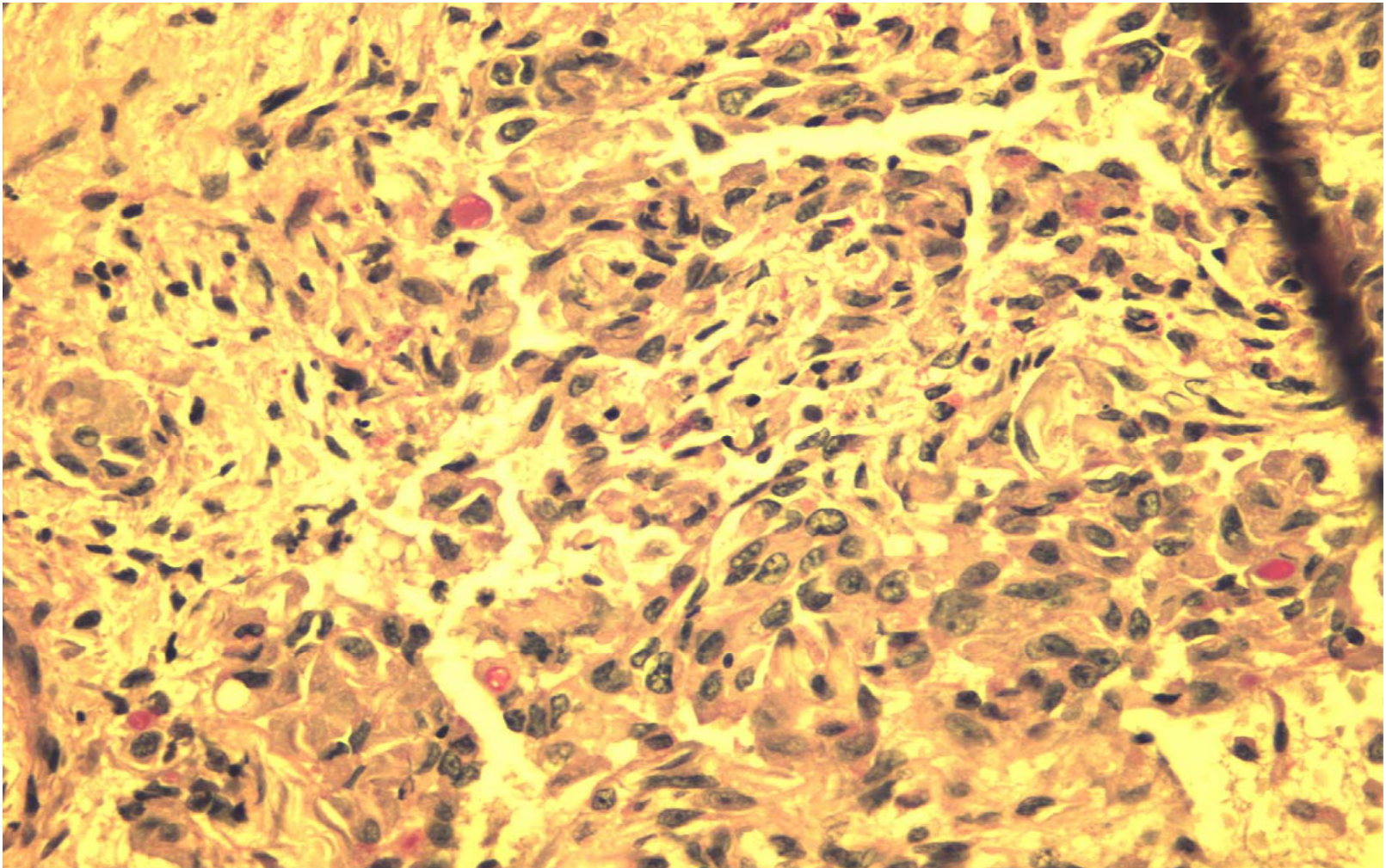


Male, 68 years.

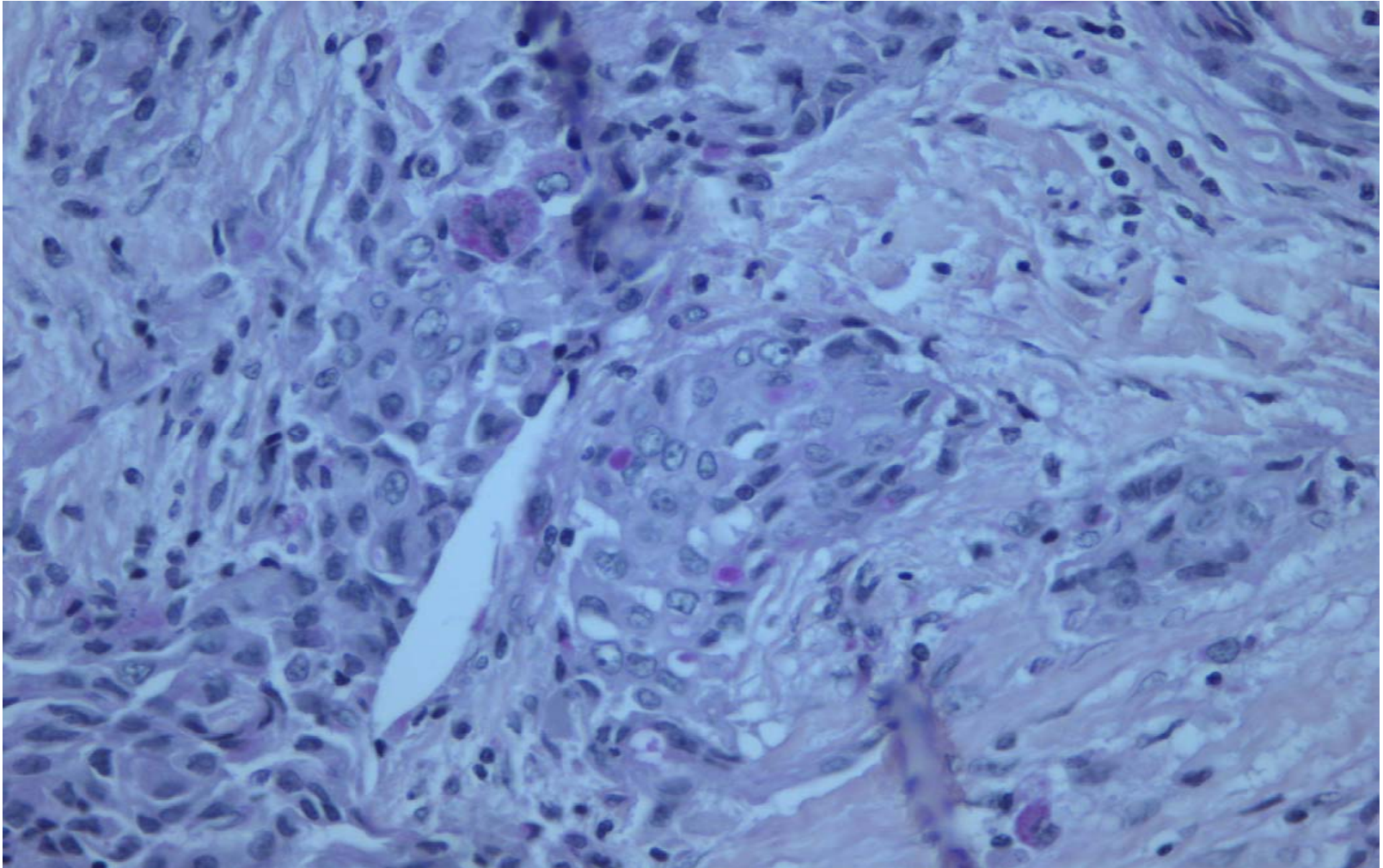
Left lobe: normal

Right lobe: nodule, not well
demarcated of 4/3/3 cm.

Mucicarmine



PAS Alfa



Intracellular Mucine in:

- ❑ Medullary carcinoma (frequent)
- ❑ Signet ring cell adenoma
- ❑ Mucoepidermoid carcinoma
- ❑ Mucinous carcinoma
- ❑ Rare but do occur: PTC. FC. UDC
- ❑ The presence of mucin especially in metastatic setting cannot rule out a thyroid origine

Diagnosis

- ▣ Mucoepidermoid Carcinoma,
Low grade Tumour

Literature

- ❑ Squamous cells in the human thyroid gland.
Am J Surg Pathol. 1978 Jun; 2(2): 133-140.
- ❑ Primary Mucoepidermoid carcinoma of the thyroid gland: a report of six cases and a review of the literature of a follicular epithelial derived tumor.
Hum Pathol. 1995 Oct; 26(10): 1099-1108.
- ❑ Composite FVPTC and a Mucoepidermoid carcinoma of the thyroid.
Am J Surg Pathol. 1995 Oct; 19(10): 1209-1215.

Case 2



Female, 42 years.

Resection of left lobe.

A white nodule of 6/4.5 cm.

Weak consistence.

What do we see

- Intact capsule. No vascular invasion
- Normo-follicular pattern
- PTC nuclei

Diagnosis

- ❑ Encapsulated FV PTC
- ❑ Lindsay tumor
- ❑ Baloch and Livolsi : Encapsulated Follicular variant of papillary Thyroid Carcinoma and Bone Metastases.

Mod Pathol. 2000 Aug; 13(8):861-865.

Case 3

Female, 45 years.

Right lobe: 4/2/1 cm with a nodule of 1.2 cm.
(larger than 1 cm)

Left lobe: two nodules were enucleated: 1.5 cm. Each with macroscopic and microscopic appearance of adenomatoid nodules.

Slide of the nodule of the right lobe

What do we see

- Clear PTC nuclei
- A second PTC, Micro PTC

Diagnosis

- PTC and Micro PTC

Small lesions

- ❑ Micro PTC
- ❑ Micro Medullary Carcinoma
Arch Pathol Lab Med. 2008 Nov; 132(11): 1767-1773.
- ❑ Solid cell nest
- ❑ Micro-follicular cluster in an adenoma or adenomatoid nodule
- ❑ Nodular C cell aggregate especially in very young and in older patients (J. Rosai)
- ❑ Crushed Follicles

Case 4



Male, 34 years.

Left lobe.

Cold nodule.

Nodule of 2.2 cm.

Squamous cells in Thyroid

Surgical Pathology of the thyroid, Livolsi, MPP,
W.B. Saunders

- Developmental rests
 - ❖ Thymic rests
 - ❖ Thyroglossal rests
 - ❖ Ultimobranchial rests
- Inflammatory
 - ❖ Goiter
 - ❖ Thyroiditis (all variants)
 - ❖ Post Biopsy

Squamous cells in Thyroid

Surgical Pathology of the thyroid, Livolsi, MPP,
W.B. Saunders

□ Tumours:

- ❖ PTC
- ❖ Mucoepidermoid
- ❖ Adenosquamous carcinoma
- ❖ Squamous cell carcinoma and variants (primary and metastatic)
- ❖ Teratoma

IHC

- p63

Diagnosis

- Infarcted adenoma with extensive squamous metaplasia

Case 5



Female, 79 years.

SPECT: hypocaptation upper half
of thyroid.

Thyroid resection and lymph
nodes.

Nodule of 1.2 cm.

Diagnosis

- ▣ Solid PTC, Tall cell component and squamous metaplasia

Case 6



Female, 69 years.

Total thyroidectomy

Three nodules 2 cm, each.

Diagnosis

- Follicular carcinoma

Case 7



Female, 74 years.
Partial thyroidectomy.
39 gr. 6/3/3 cm

Diagnosis

- Amyloid Goiter

Case 8



Female, 19 years

Right lobe and isthmus of 32 gr.

Nodule of 3.7/2.5 cm.

Diagnosis

- Mucinous Follicular adenoma

Case 9



Female, 80 years.
Our biopsy is from the right lobe.
Resection of a parathyroid
adenoma and left lobe.

Diagnosis

- ❑ Follicular adenoma with bizarre nuclei
- ❑ Don't use atypical adenoma

Case 10



Female, 83 years.
Resection of a nodule of 5cm.

Diagnosis

- FV PTC Three areas in this nodule of PTC make it as a whole a PTC

Case 11



Female, 52 years.
Subtotal thyroidectomy.

Diagnosis

- Multifocal PTC

Case 12



Male, 43 years.
Subtotal thyroidectomy.

Diagnosis

- Multiple Solid cell nests

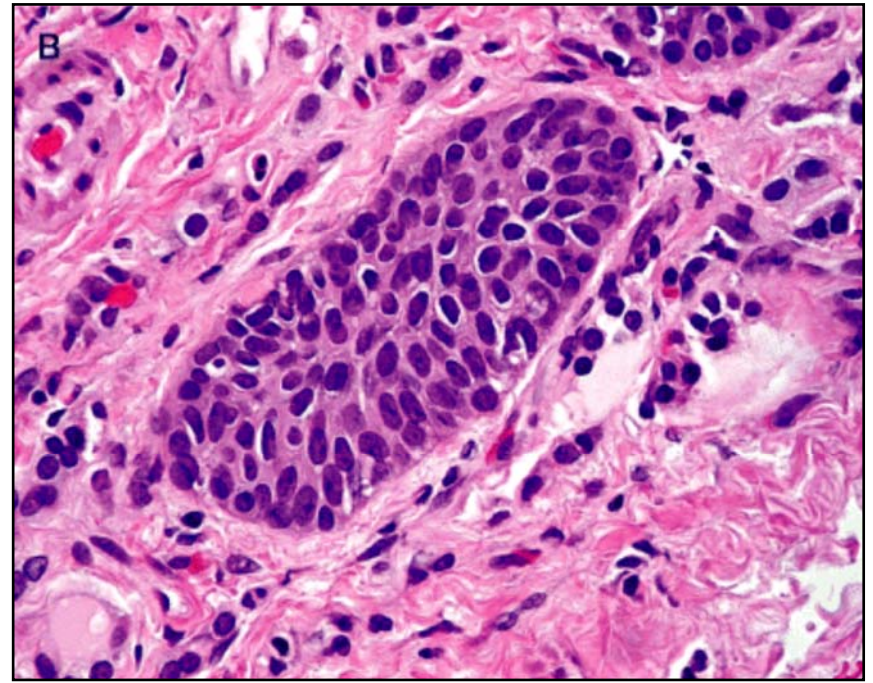
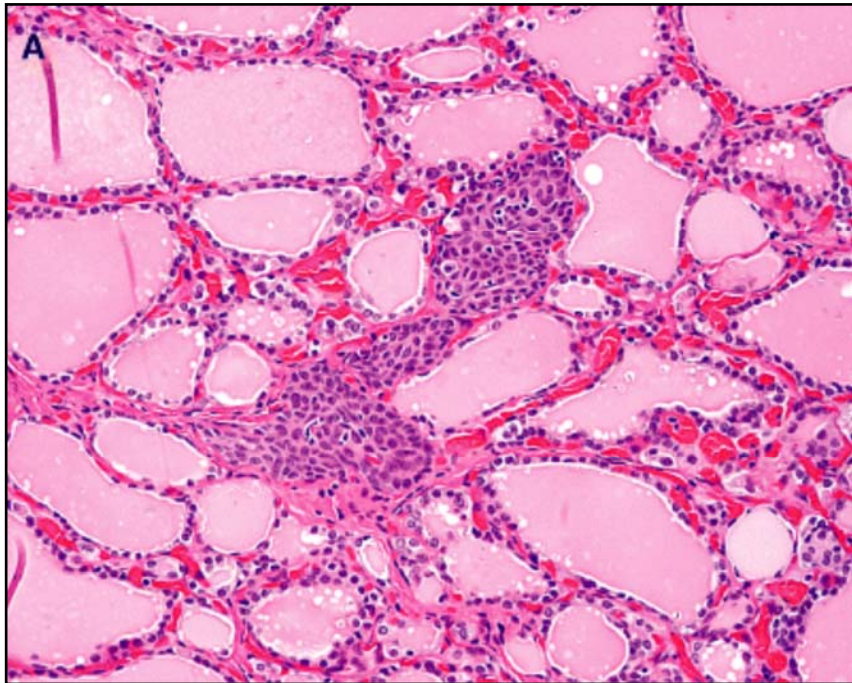
SCN

- ❑ Solid cell nests are indeed (fifth body) ultimobranchial body remnants
- ❑ They mimic squamous metaplasia
- ❑ Three components: Clear cells, Main cells and Mixed Follicles (80% of cases)
- ❑ Clear cells are C cells: Calcitonin +
TTF1 +/-
- ❑ Mixed Follicles are “specialised”
contain Pas + colloid material, TG +
- ❑ Main cells CEA+, CK20 –ve, TTF1 –ve, TG –ve
are elongated or even spindle shaped.
Squamoid with no intercellular bridges.
Nuclear grooves.

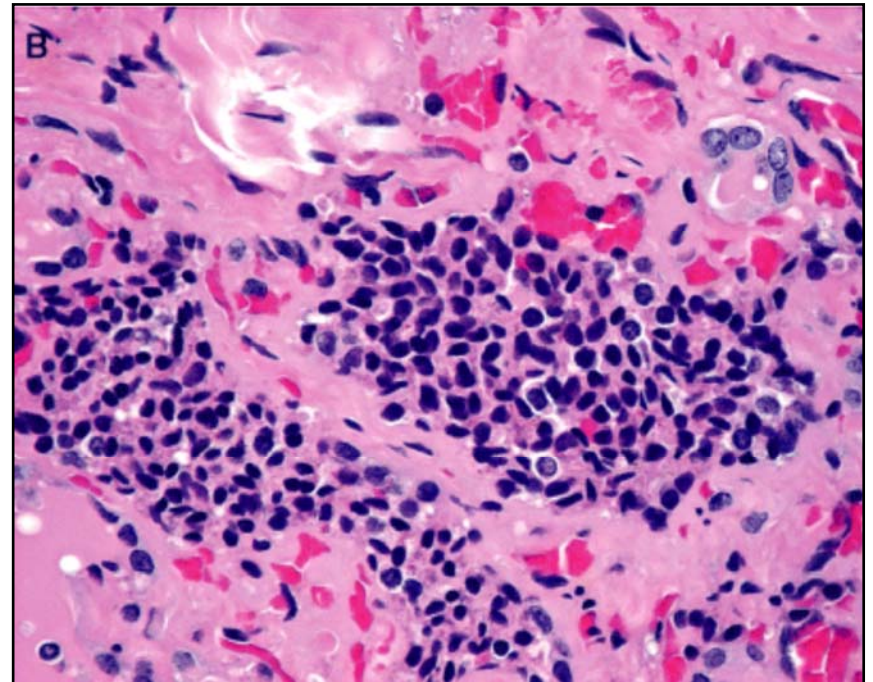
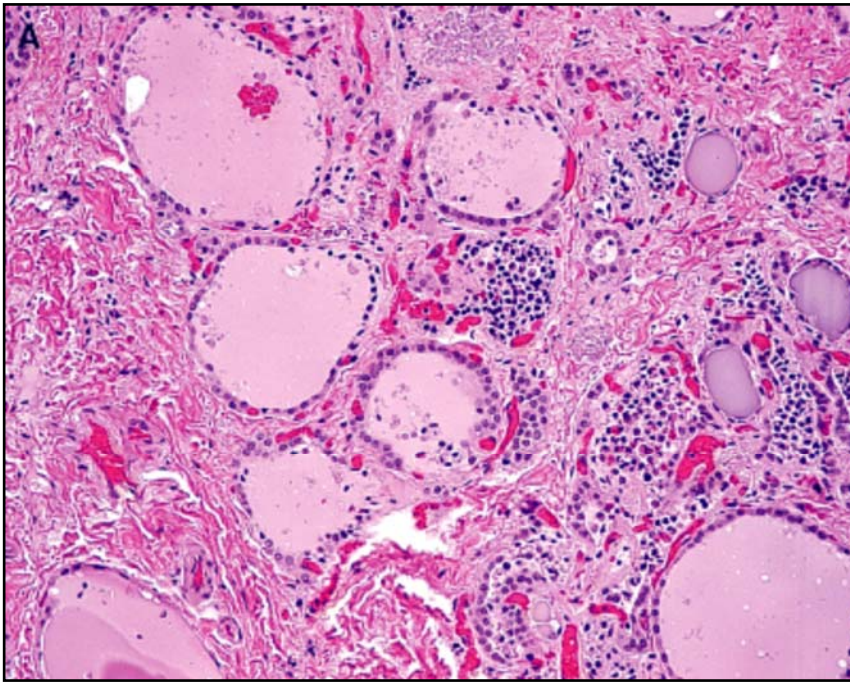
SCN

- ❑ Not a micro-papillary carcinoma, not a small medullary carcinoma, not a C cell aggregate, not a small adenomatoid nodule
- ❑ Cartilage can be present

Histopathology. 2006 Aug;49(2): 107-120



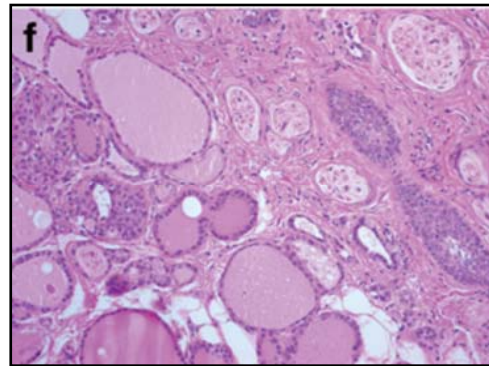
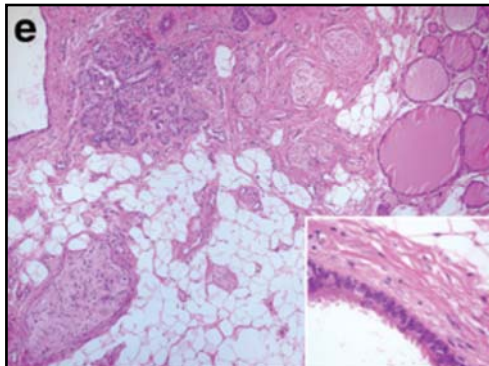
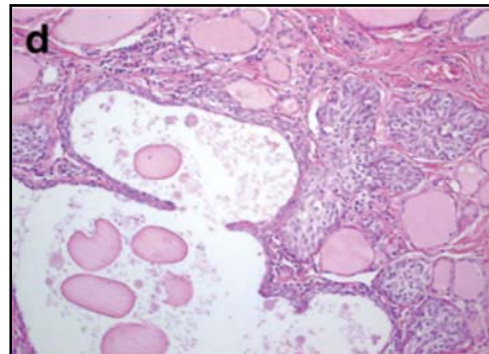
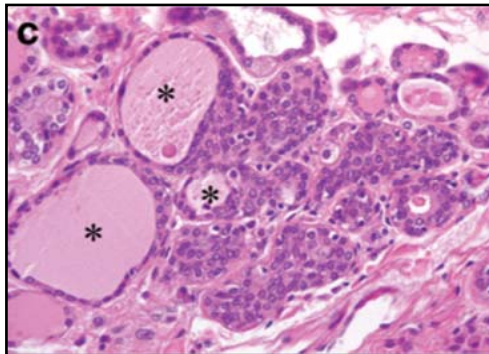
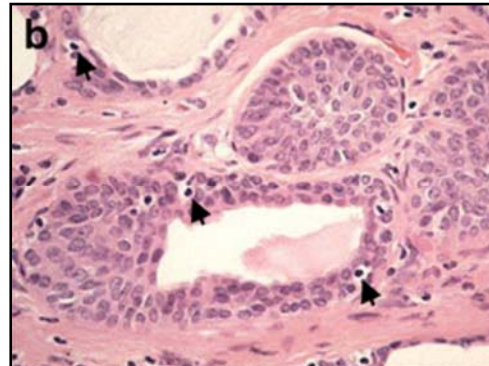
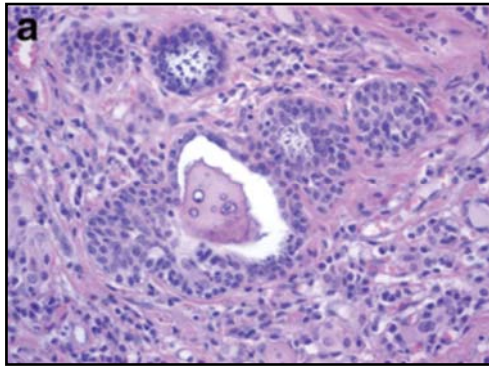
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Crushed follicles

Solid Cell Nests

Mod Pathol. 2004 Jul;17(7):819-26.



Q case



What do you think it is?

Male, 32 year.

Total thyroidectomy for Graves disease. White nodule of 2 cm.