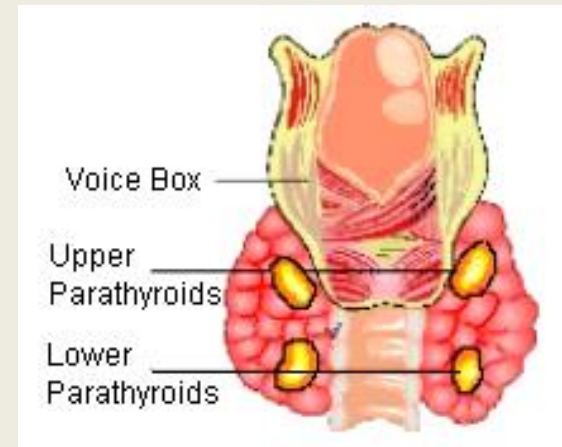


Endocrine pathology I.

Hypophysis, thyroid gland, parathyroid

Dr. Attila Zalatnai



Endocrine Organs

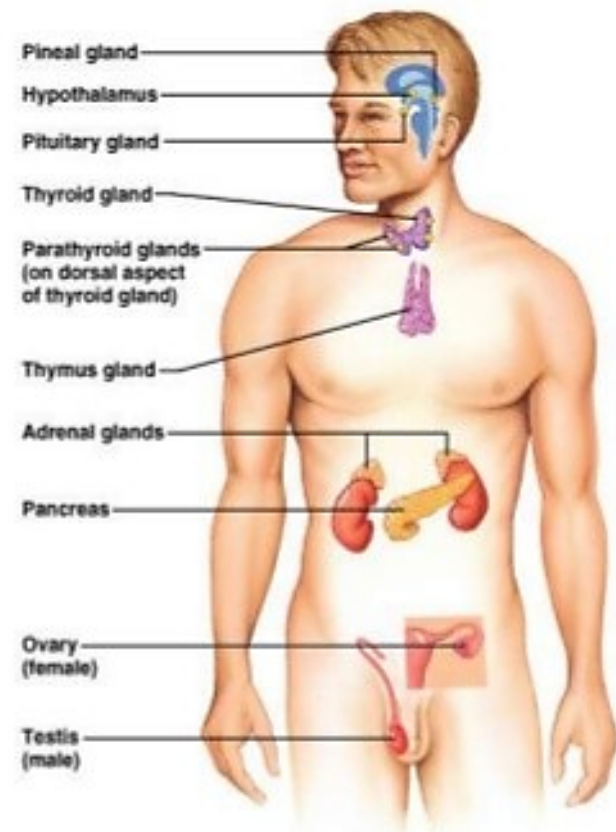
- **Cells forming endocrine organs**

- Pituitary gland
- Thyroid gland
- Parathyroid glands
- Adrenal: 2 glands
Cortex
Medulla
- Pineal gland

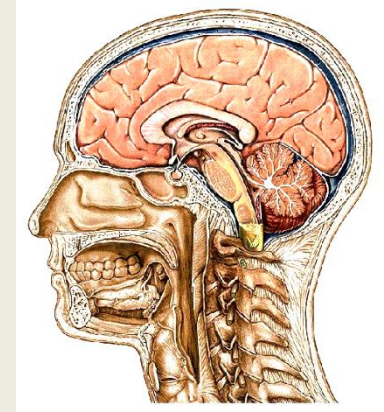
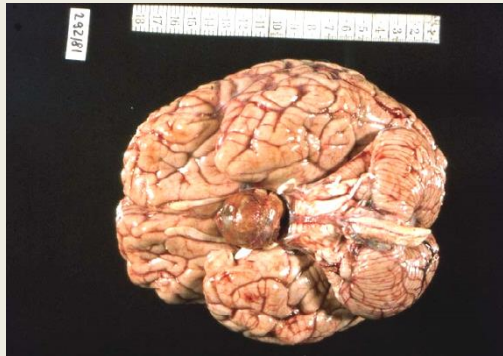
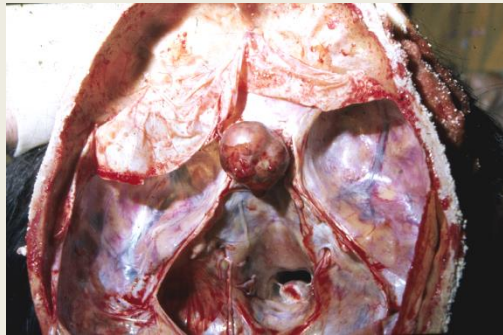
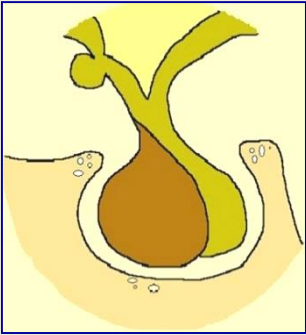
- **Endocrine cells in other organs**

- Pancreas
- Thymus
- Gonads
- Hypothalamus

- **Isolated endocrine cells**-APUD cell system



Adenohypophysis



Hyperpituitarism

Hyperplasia - in pregnancy (PRL/GH cells)
complication: infarct (Sheehan-syndr.)

Adenoma - micro/macroadenoma (< 1 cm >)
- sporadic or MEN-1 syndrome
- basophilic, eosinophilic, chromophobic
- hormone secreting, inactive



GH-producing (eosinophilic): gigantism
acromegaly

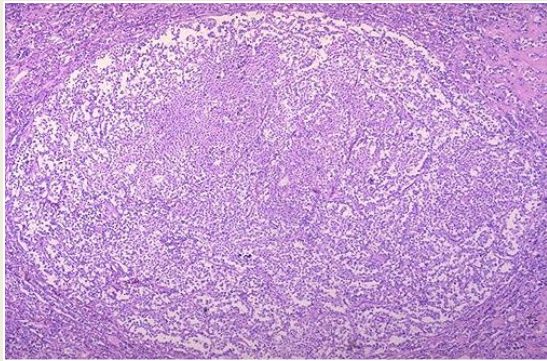
Prolactinoma: most frequent; mainly microadenoma
galactorrhea

ACTH-producing (basophilic): Cushing disease

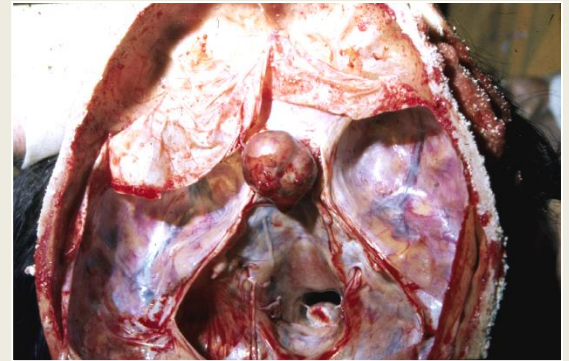
TSH, FSH/LH secreting adenomas: rare

Chromophobic adenomas: compression

Carcinoma: - extreme rare



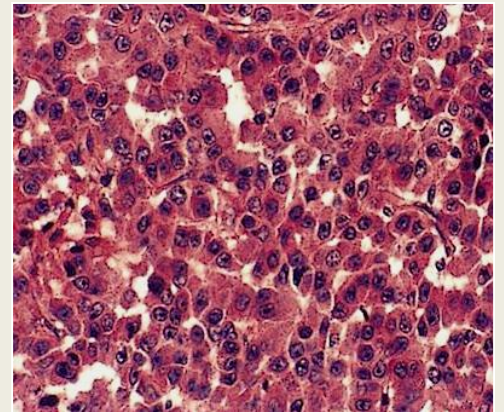
microadenoma



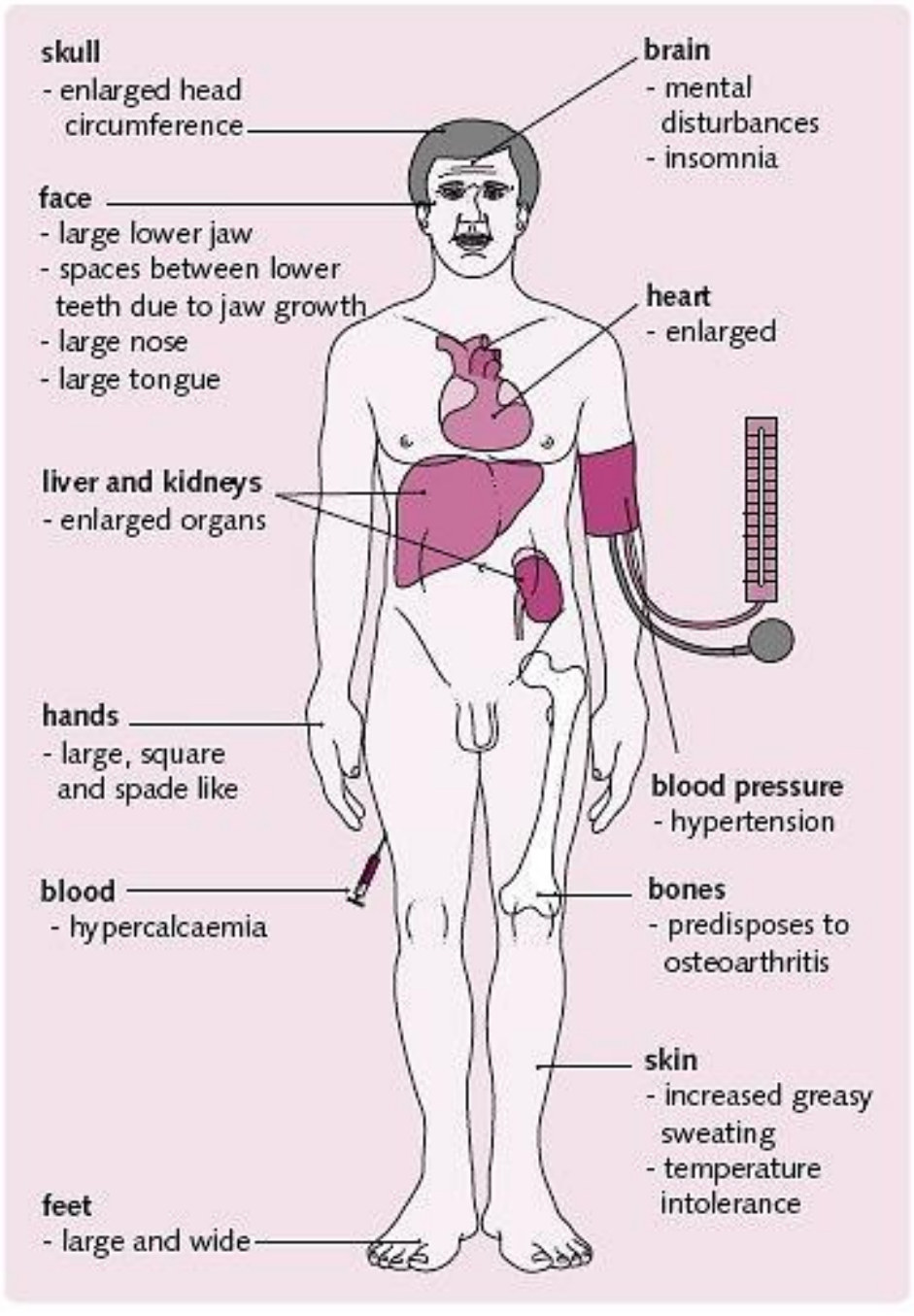
macroadenoma

GH-secreting adenomas

a./ gigantism

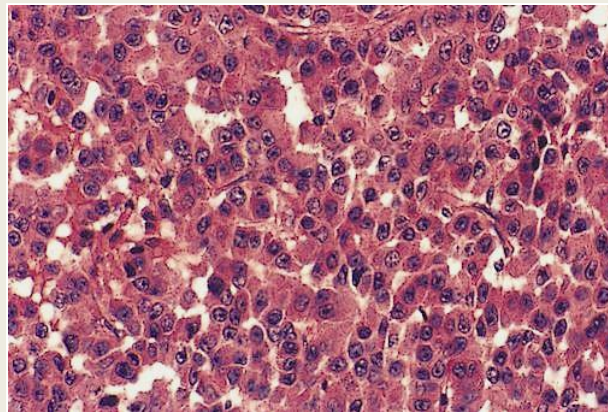
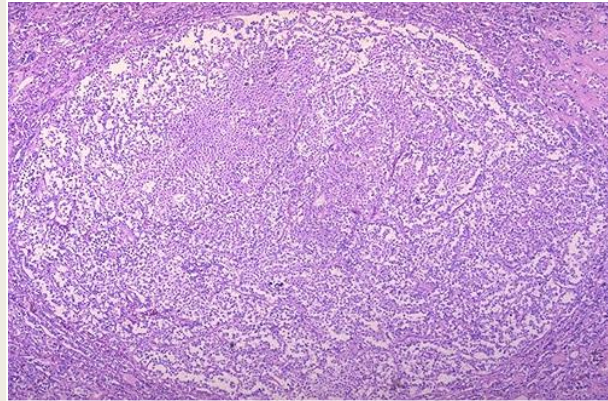


b./ acromegaly



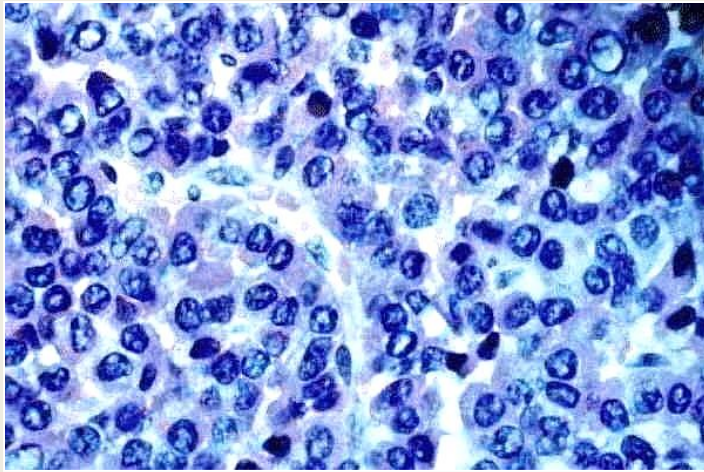
Prolactinoma:

- the most frequent hypophyseal adenoma
- galactorrhea, amenorrhea, impotence

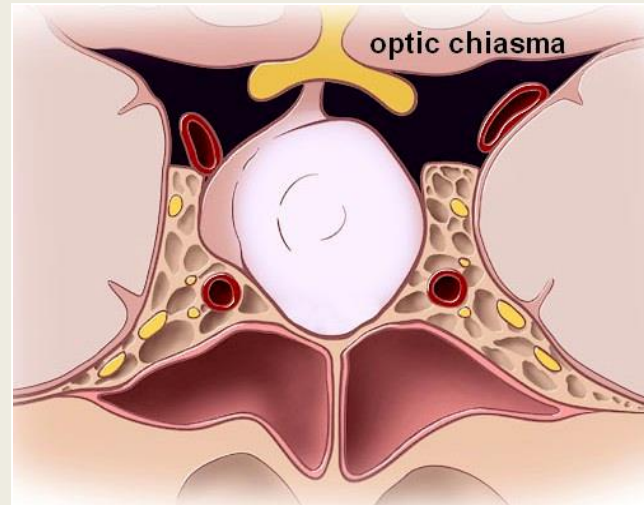
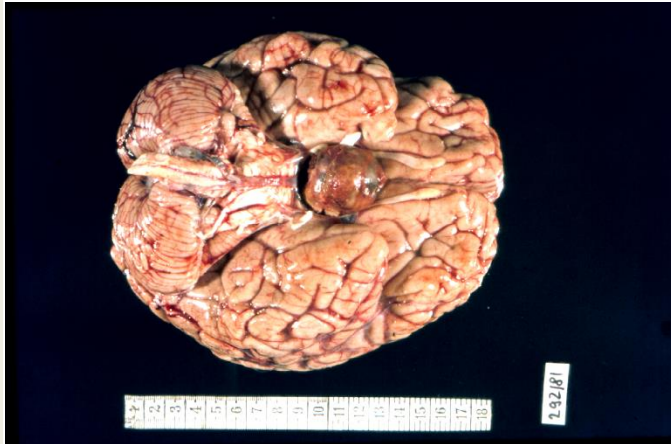


ACTH-secreting adenoma:

Cushing-disease



O-cell adenoma
(chromophobic cells)



Pituitary carcinoma

- extreme rare
- metastases: extracranial!

Metastases to the pituitary gland:

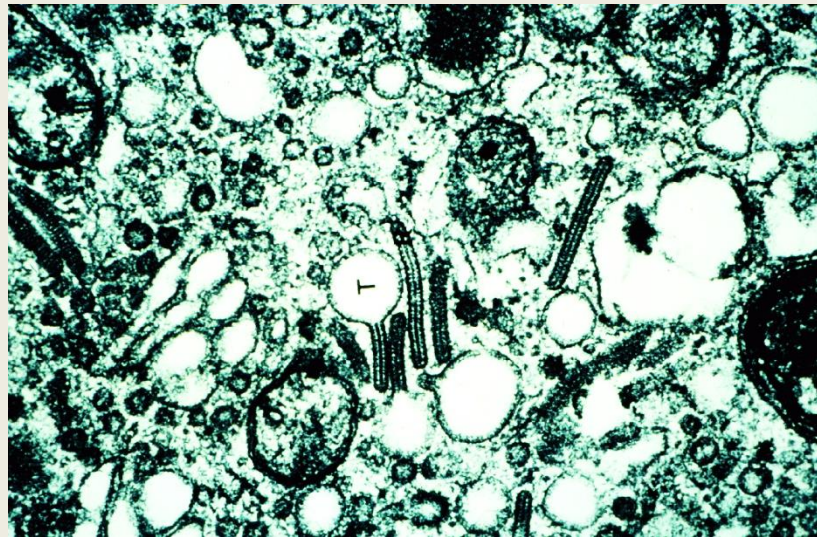
from breast, lung cancers

Hypopituitarism:

- panhypopituitarism or isolated hormone depletion

- background: local destruction

(chromophobic adenomas, craniopharyngeoma, metastatic tumors [breast cc, lung cc], infarction [Sheehan-syindr.], Hand-Schüller-Christian disease)

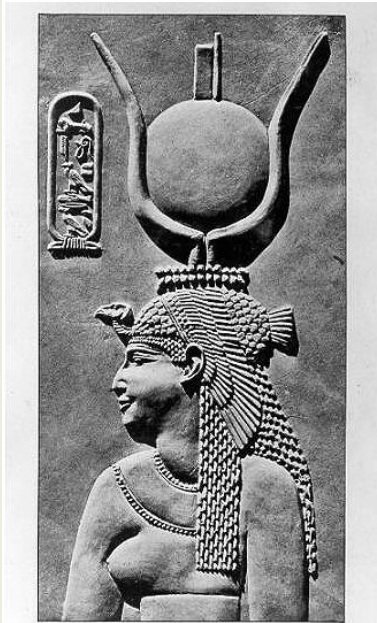


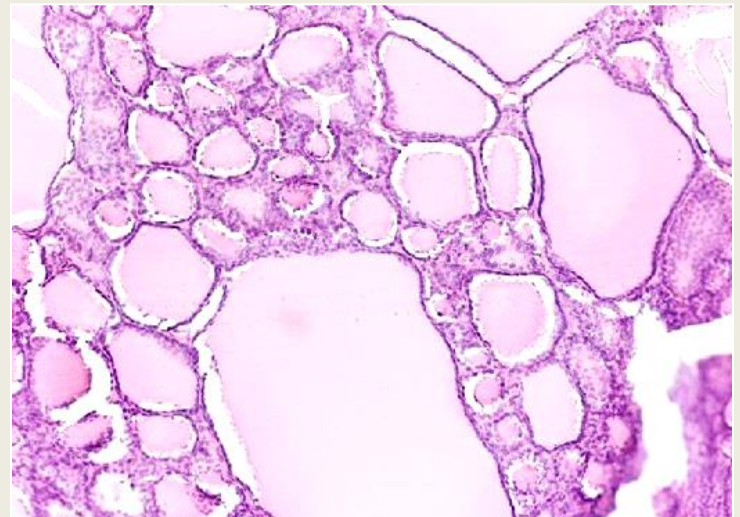
Thyroid gland

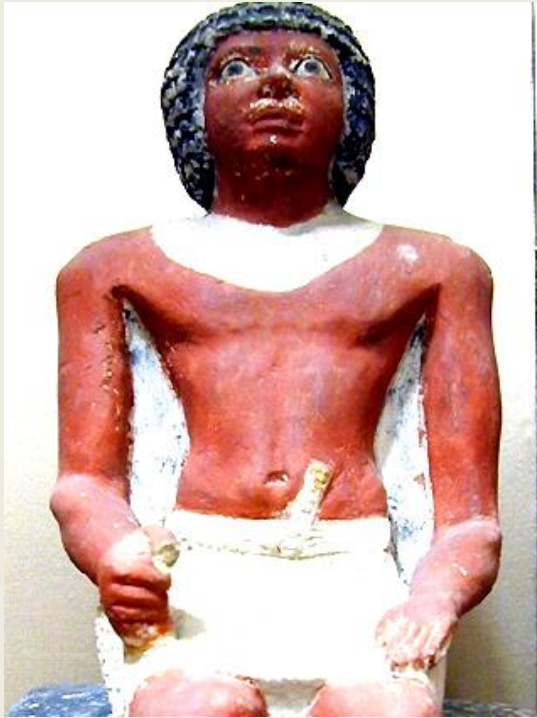


Enlargement: goiter

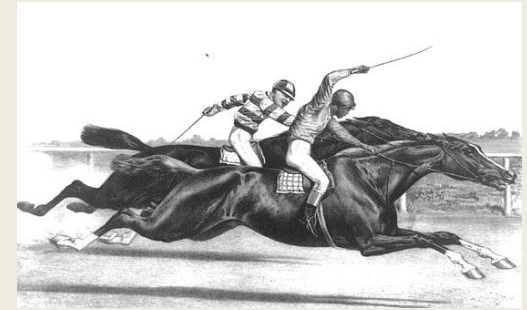
- normofunctional, hyperfunctional, hypofunctional
- diffuse, (multi)nodular





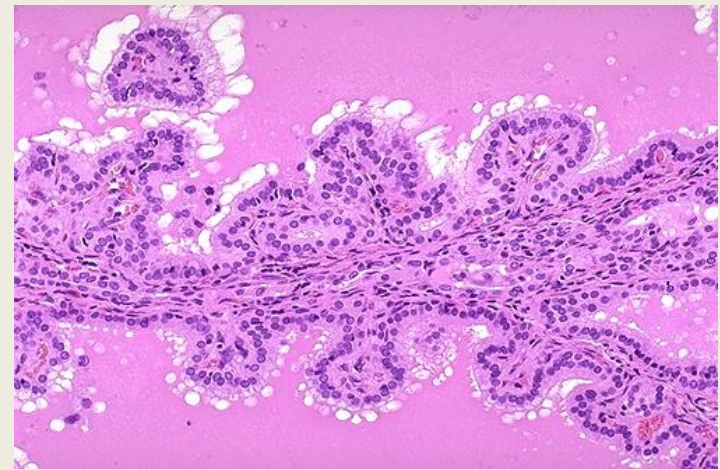
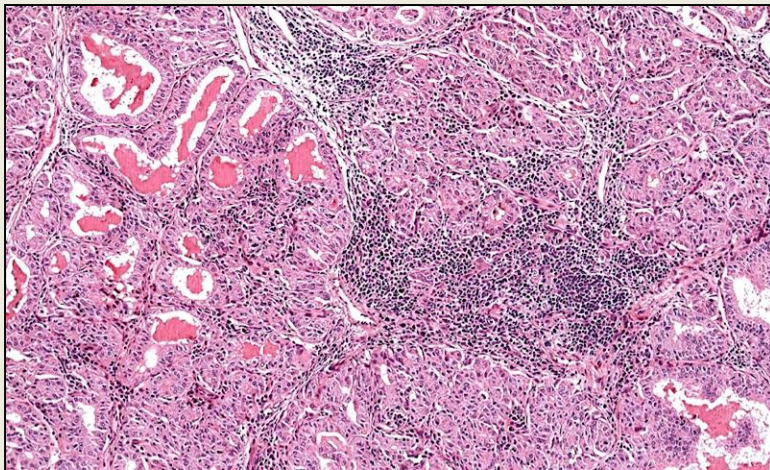


Thyroid gland

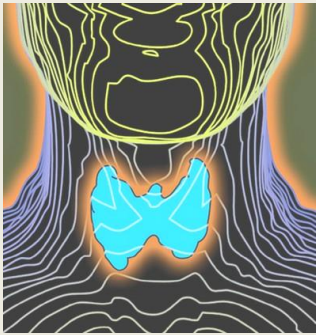


Basedow (Graves) – disease

- especially in women, between 20-40 years
- autoimmune disease (thyroid-stimulating immunoglobulin)
- primary target: TSH-receptor
- continuous thyroid-activation
- severe hyperthyreosis, exophthalmus, pretibial edema,
increased sympathetic activity
- diffuse enlargement, depleted colloid, papillary infoldings



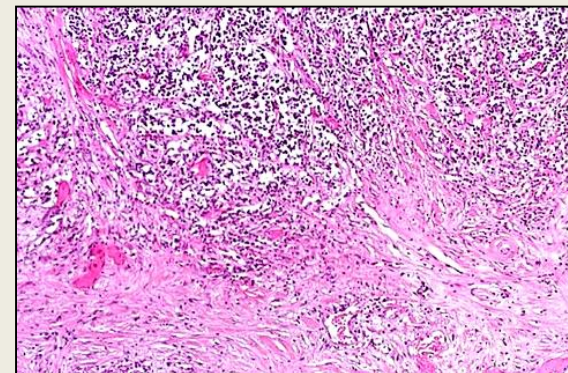
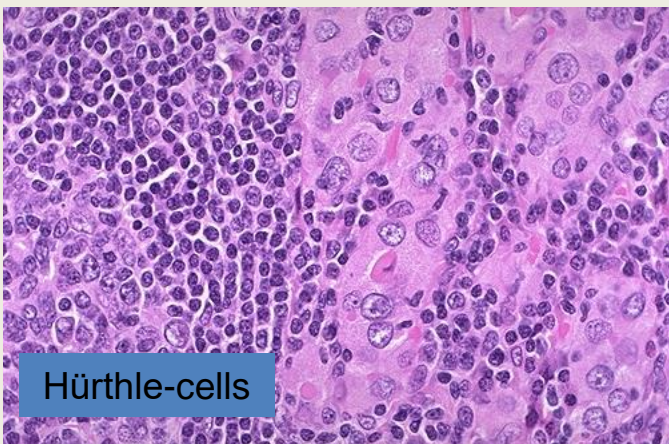
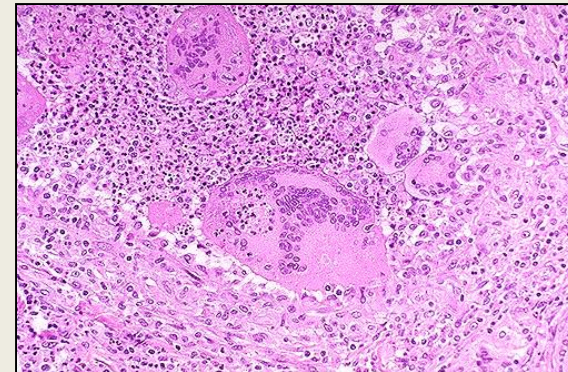
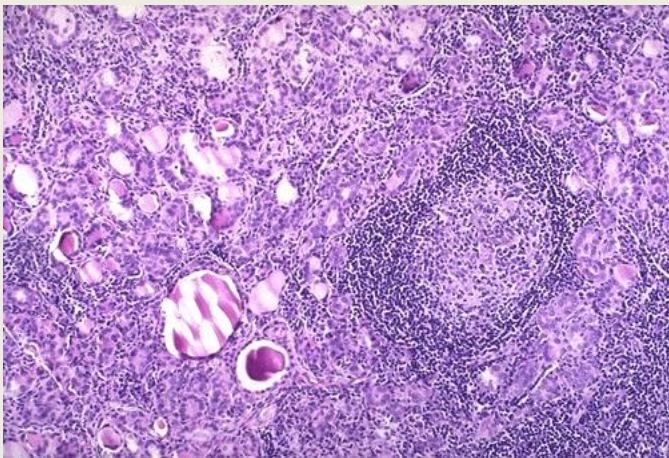
Thyroid gland



Thyreoiditis: Acute inflammations are rare!

Chronic:

- Hashimoto-thyreoiditis; → hypothyreosis
- De Quervain (granulomatous); painful
- Riedel-thyreoiditis; wooden-hard
- Chronic lymphocytic thyreoiditis



Thyroid gland

Neoplasms:

Benign

follicular adenoma

(solitary, encapsulated)

Malignant

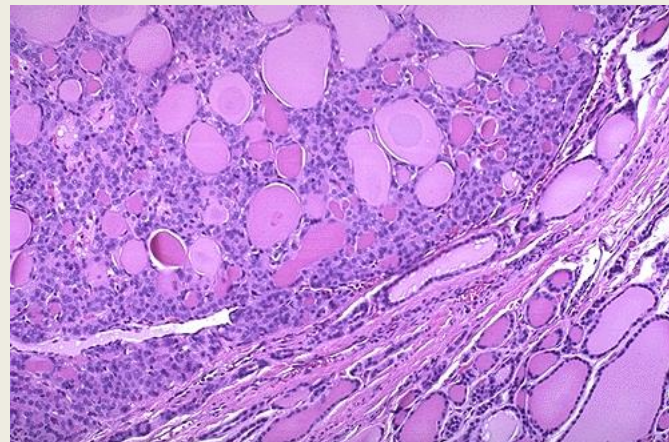
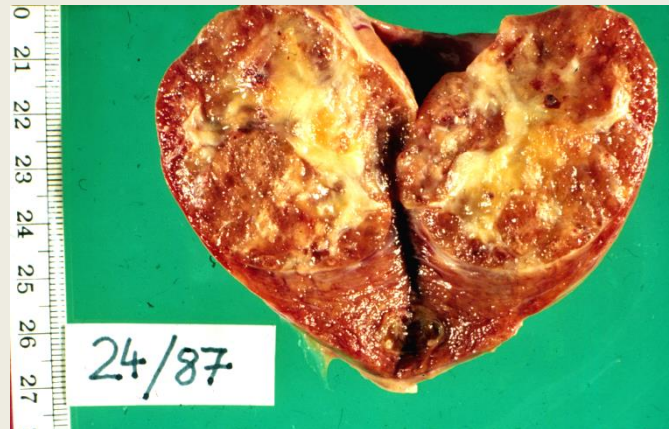
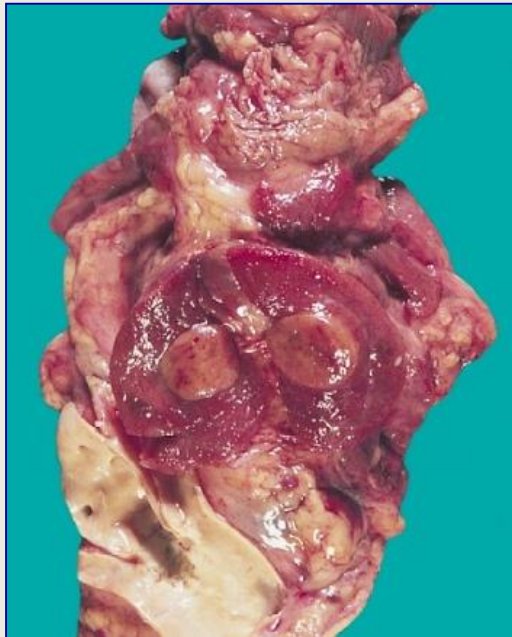
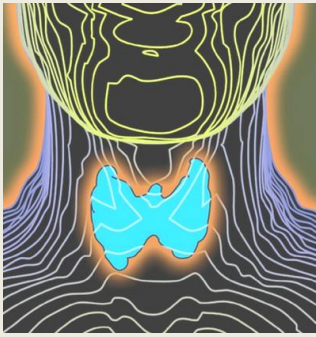
follicular carcinoma

papillary carcinoma

medullary carcinoma

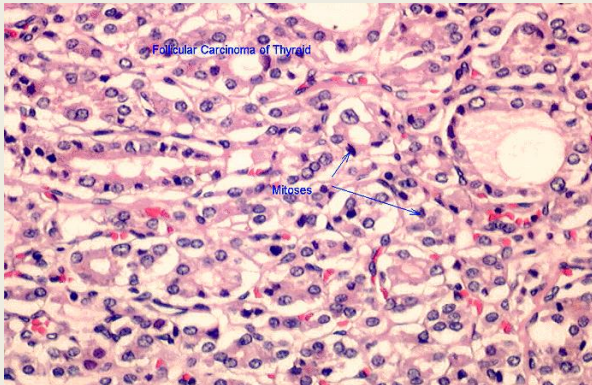
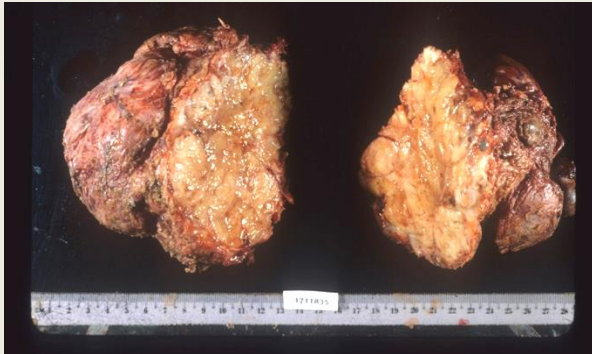
anaplastic carcinoma

malignant lymphoma (B-)



Thyroid gland – malignant tumors

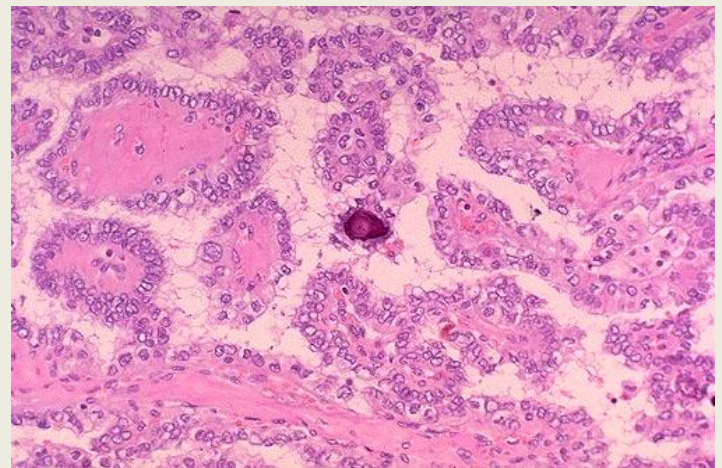
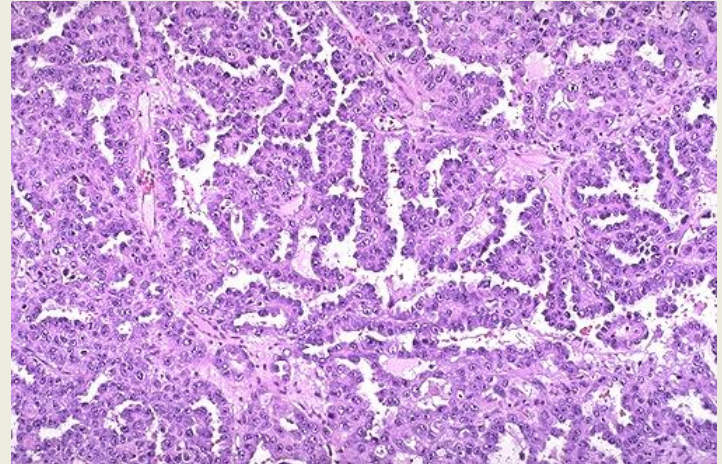
Follicular carcinoma



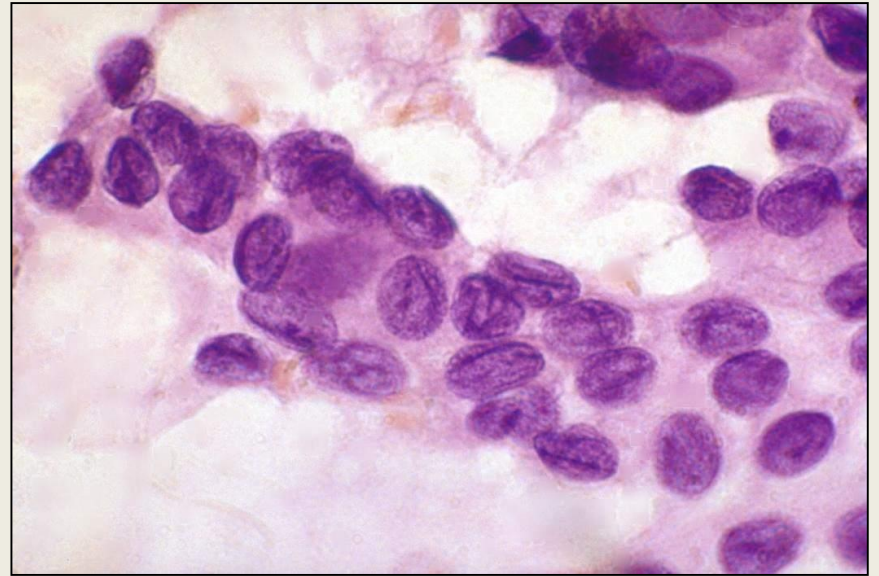
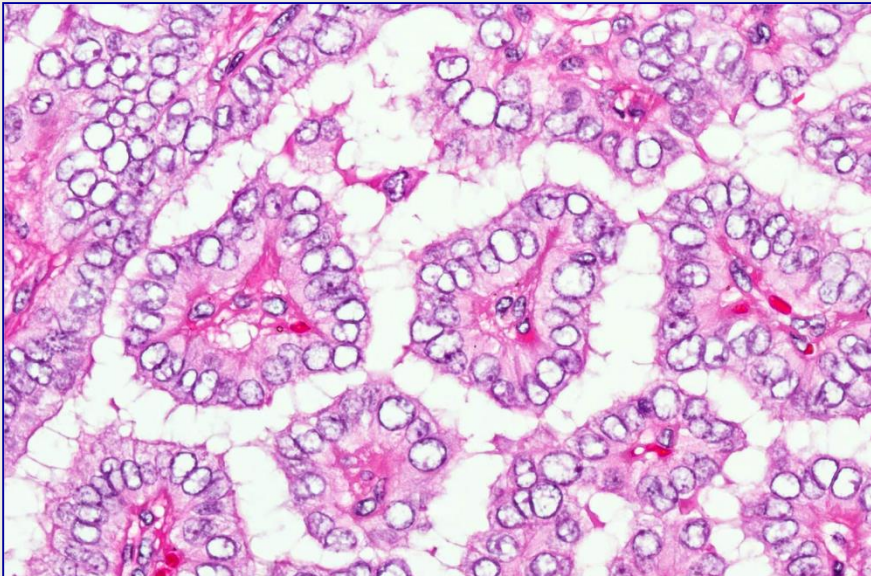
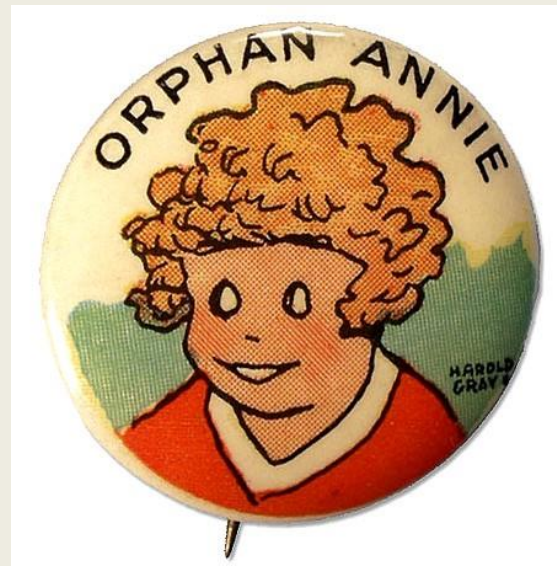
Blood-borne metast.!



Papillary carcinoma

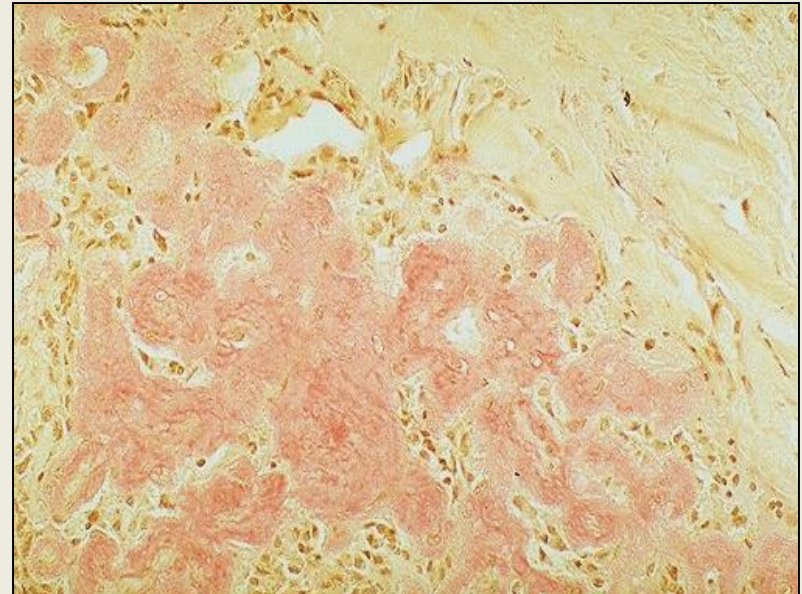
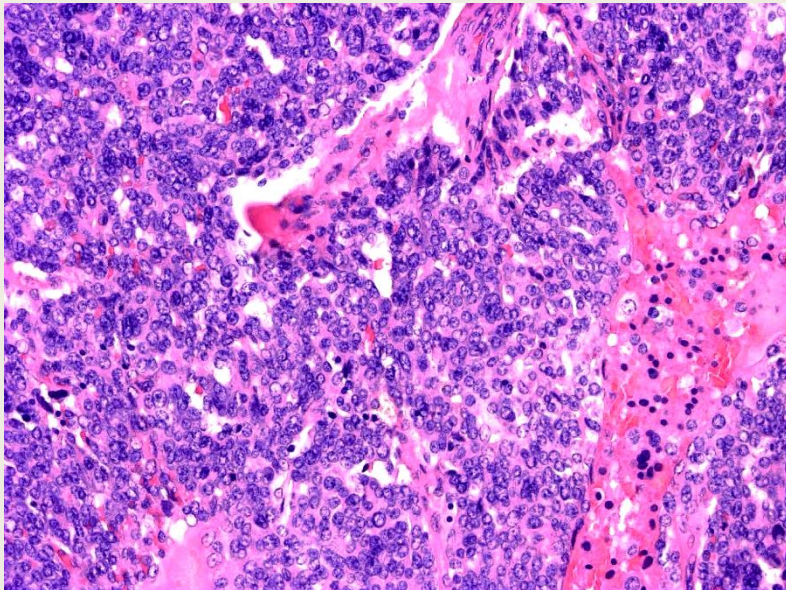
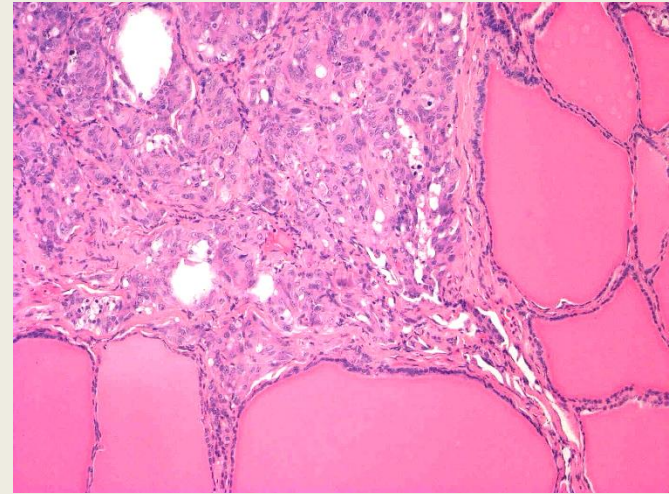


Lymphogenic metast.!



Thyroid gland – medullary carcinoma

- parafollicular (C-cell) origin
- stromal amyloid (AE amyloid)
- MEN-2 syndrome component (RET-mutation)
- calcitonin-secretion, hypocalcemia
- lymphogenic metastases

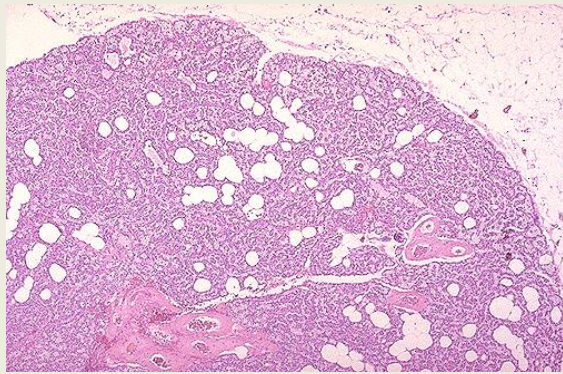
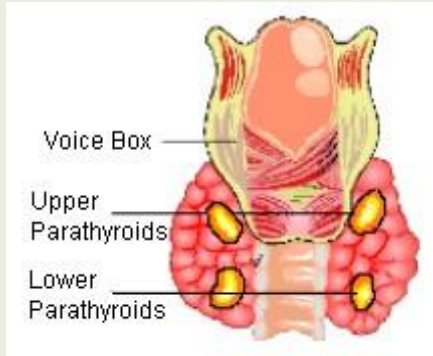


Parathyroid

Hyperplasia – all the 4 glands are involved

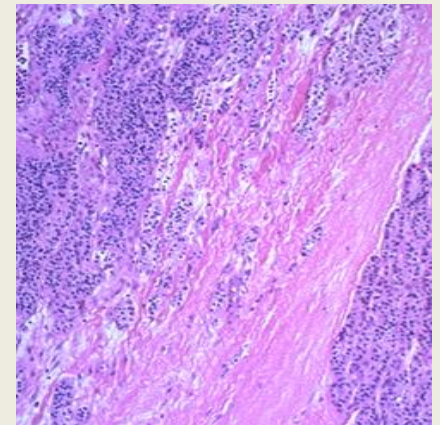
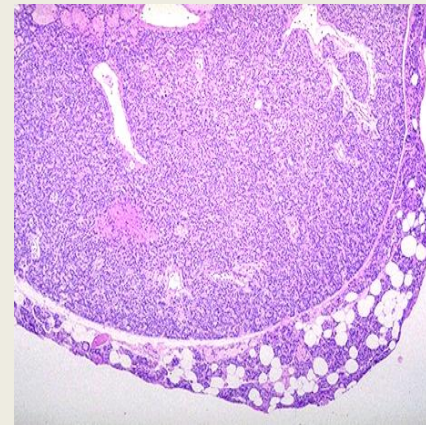
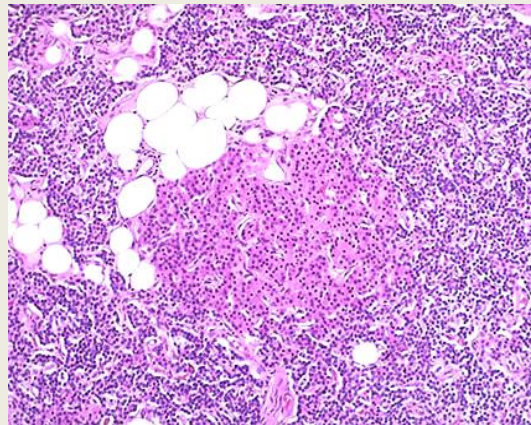
Adenoma – 1 gland is involved, the rest are atrophic

Carcinoma – infiltrative growth, cartilage-firm



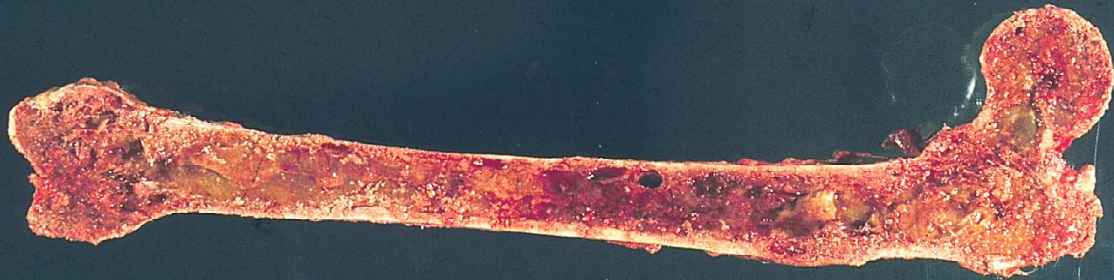
HYPERCALCEMIA!

- Recklinghausen's disease (cystic fibrous osteodystrophy)
- metastatic calcification (heart, stomach, nephrocalcinosis)
- nephrolithiasis



„Brown tumor”

346/81



N.B: diaphysis!