

Thyroid tumors

Thyroid tumors can be:

1. **benign:** adenoma;
2. **malignant;**
 1. **primary;**
 1. **epithelial:** papillary ca, follicular ca, medullary ca, anaplastic ca;
 2. **non-epithelial:** malignant lymphoma, sarcomas;
 2. **secondary:** metastasis of breast, lung and kidney carcinoma .

Risk factors for the development of thyroid malignancy include:

- ionizing radiation (previous irradiation of the neck);
- genetic influences;
- high level TSH;
- untreated autoimmune thyroiditis
- MEN2A syndrome
- pheochromocytoma.

Epidemiology

- have an increasing incidence, the most common endocrine tumors
- they occur most often between the ages of 40 and 50, but are not uncommon in children either
- more in women (2:1)

Differentiated thyroid carcinoma

Differentiated carcinoma is the most common malignity of glandula thyroidea. We distinguish:

1. **Papillary carcinomas** – grow slowly x tendency to local recurrences, metastasize mainly to the cervical lymphatic nodes.
2. **Follicular carcinomas** – metastasize hematogenously (bones, lungs).

Clinical characteristic

- A solitary growing knot of solid consistency (sometimes already in the present goiter – faster growth + change in appearance at USG;
- in an advanced stage – nodal metastases of the neck (less frequent distant metastases);
- thyroid function is not altered (x functionally active metastases may be a source of hyperthyresis).

Diagnosis

- Clinical characteristic, USG, aspiration biopsy with the cytological examination.

Therapy

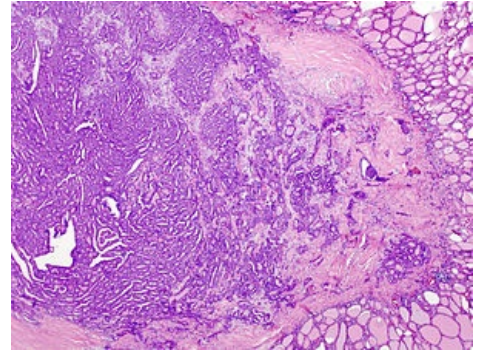
- **Total thyroidectomy** (optionally in combination with selectively modified block neck resection;
- **radioiodine therapy;**
- **external beam radiotherapy;**
- **substitution-suppression therapy** (synthetic analogs of thyroid hormones – levothyroxine, replaces missing hormones and inhibits TSH in the pituitary gland).

Thyroglobulin is used as an early marker of recurrence/metastasis.

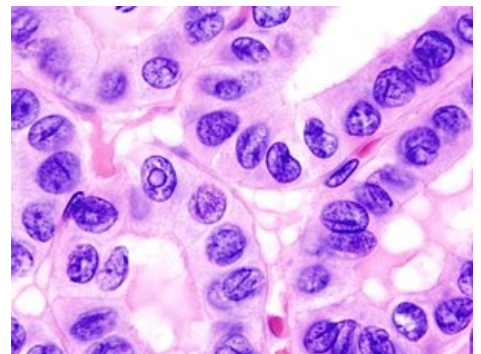
Prognosis

- Very good with early detection of the disease;
- worse in elderly patients and in distant multiple metastases.

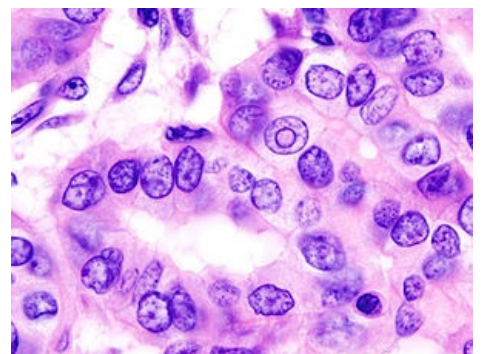
References



Histopathological picture of papillary thyroid carcinoma



Histopathological picture of papillary thyroid carcinoma



Papillary carcinoma of the thyroid gland

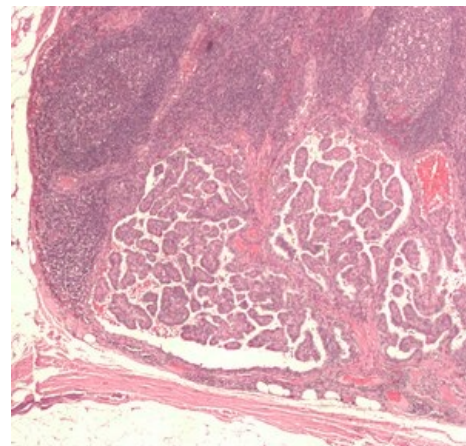
Related articles

- Thyroid tumors
- Anaplastic thyroid cancer
- Medullary thyroid carcinoma

Sources

- DÍTĚ, P. *Internal Medicine*. 2. edition. Praha : Galén, 2007. vol. 586. ISBN 978-80-7262-496-6.
- KLENER, Pavel. *Internal Medicine*. 3. edition. Praha : Galén, 2006. vol. 1158. ISBN 80-7262-430-X.

Thyroid gland diseases	
non - cancerous diseases	Hypothyroidism • Congenital hypothyroidism • Chronic (autoimmune) thyroiditis • Myxedema coma • Hyperthyroidism • Graves-Basedow disease • Thyrotoxicosis • Thyrotoxic crisis • Neonatal hyperthyroidism • Goiter (pediatrics) • Thyroiditis • Thyroid gland diseases
cancer illnesses	Thyroid adenoma • Toxic adenoma • Differentiated thyroid carcinoma • Anaplastic thyroid carcinoma • Medullary thyroid carcinoma
thyroid examination	Examination of thyroid function • Thyroid diseases examination
Portal: Endocrinology and metabolism	



Metastasis of papillary carcinoma in lymphatic node

Portal: Internal Medicine | Endocrinology | Oncology | Otorhinolaryngology | Surgery >

Differentiated carcinoma is the most common malignancy of the thyroid gland. We distinguish:

1. **Papillary carcinomas** – they grow slowly x tend to local recurrences, they metastasize mainly to the cervical lymph nodes.
2. **Follicular carcinomas** – metastasize hematogenously (bones, lungs).

Clinical picture

- Solitary growing knot of solid consistency (sometimes already present in the goiter – faster growth + change of appearance at USG);
- in advanced stage nodal metastases on the neck (less often distant metastases);
- thyroid function is not altered (x functionally active metastases may be a source of hyperthyroidism).

Diagnostics

- Clinical picture, USG, aspiration biopsy with cytological examination.

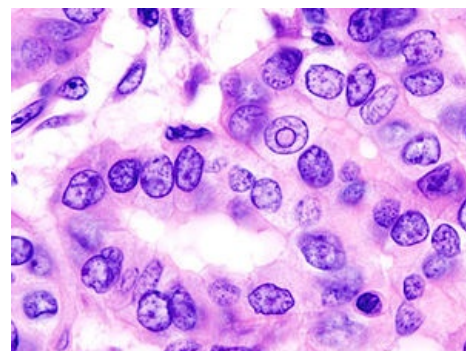
Therapy

- **Total thyroidectomy** (possibly in combination with selective modified block neck resection);
- **radioiodine therapy** (iodine¹³¹I isotope);
- **external radiotherapy**;
- '*substitution-suppression therapy* (synthetic analogues of thyroid hormones – levothyroxine, replaces missing hormones and inhibits TSH synthesis in the pituitary gland).

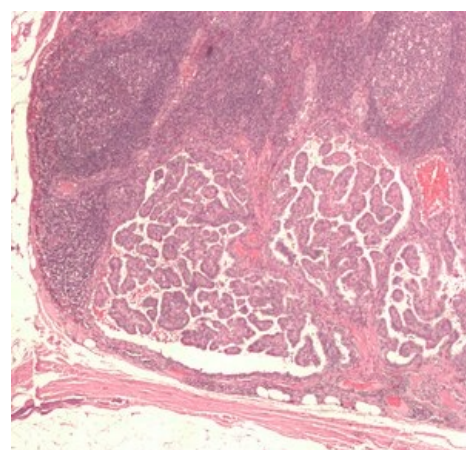
Thyroglobulin is used as an early marker of recurrence / metastasis.

Prognosis

- Very good with early detection of the disease;
- worse in elderly patients and in distant multiple metastases.



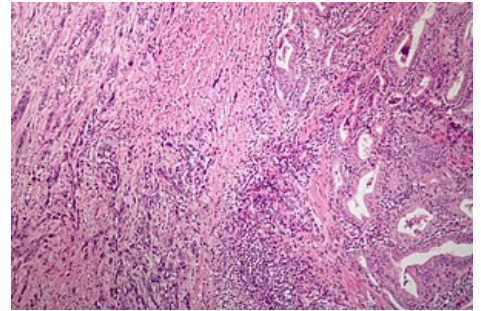
Papillary thyroid carcinoma



Lymph node papillary carcinoma metastasis

Anaplastic thyroid carcinoma

Anaplastic thyroid carcinoma i. e. anaplastic thyroid cancer is a rare (1–5 % of thyroid carcinoma). It usually affect individuals older than 60–70 years. Characteristic features for this type of tumor is: rapid growth of cancerous nodules, invasion to surroundings and mechanical syndrome (due to pressure). It creates distant metastasis (lymph nodes, lungs, liver, CNS).



Anaplastic thyroid carcinoma

Therapy

- Radical surgical intervention (total thyroidectomy),
- paliative care – cytostatic drugs + external radiation;
- often the therapy is only supportive.

Prognosis

- Unfavorable, the median survival is 5 months.

Links

Related articles

- Nádory štítné žlázy
- Diferencovaný karcinom štítné žlázy
- Medulární karcinom štítné žlázy

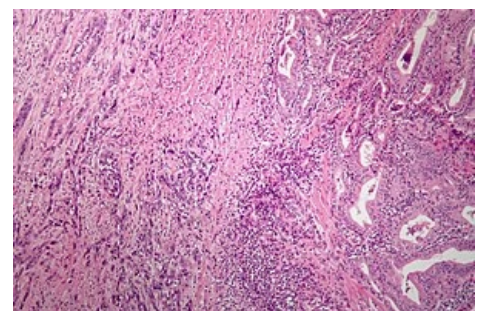
Literature

- DÍŤĚ, P., et al. *Vnitřní lékařství*. 2. vydání. Praha : Galén, 2007. ISBN 978-80-7262-496-6.
- BENEŠ, Jiří. *Studijní materiály* [online]. ©2007. [cit. 2014]. <<http://jirben.wz.cz>>
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References

1. KEUTGEN, Xavier M, Samira M SADOWSKI a Electron KEBEBEW. Management of anaplastic thyroid cancer. *Gland Surg* [online]. 2015, vol. 4, no. 1, s. 44-51, dostupné také z <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4321056/?tool=pubmed>>. ISSN 2227-684X.

Anaplastic carcinoma of the thyroid gland is rare (1-5% of thyroid carcinomas). It usually affects people over 60-70 years of age. This type of tumor is characterized by rapid growth of the tumor node, invasion of the environment and mechanical syndrome (from oppression). It creates early distant metastases (nodes, lungs, liver, CNS).



Anaplastic thyroid carcinoma

Therapy

- Radical surgery (total thyroidectomy),
- palliation – cytostatics + external irradiation.
- often treatment only symptomatic.

Prognosis

- Unfavorable, median survival 5 months^[1].

Medullary thyroid carcinoma

Medullary thyroid carcinoma originates from **parafollicular**, also called C-cells, of the thyroid gland. In four clinical forms:

- **sporadic** (70-80% medullary ca, most aggressive)
- **familial** (AD inherited)
- **MEN 2A and MEN 2B syndromes** (together with pheochromocytoma, neurofibromas, parathyroid adenomas, ...)

Clinical picture + diagnostics

- Similar to differentiated thyroid cancer,
- secretes calcitonin (marker),
- is more aggressive than differentiated carcinoma, at the time of diagnosis Molecular mechanisms of metastasis in more than 50% of cases,
- in medullary thyroid carcinoma in connection with MEN 2A and MEN 2B syndromes, vanillic acid is measured,
- 50% of medullary ca produces CEA (carcinoembryonic antigen).

Therapy

Total thyroidectomy, external radiation (C cells do not accumulate iodine), chemotherapy.

Forecast

Despite the aggressiveness, the prognosis is favorable - 75% of patients survive for 15 years.

Links

Related Articles

- Thyroid tumors
- Differentiated thyroid cancer
- Anaplastic thyroid cancer

Used literature

-
-

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Source

- ws:Medulární karcinom štítné žlázy

> Medullary thyroid carcinoma originates from **parafollicular C-cells** of the thyroid gland. In four clinical forms:

- **sporadic** (70-80% of medullary carcinoma, the most aggressive)
- **familial** (AD hereditary)
- **MEN 2A and MEN 2B syndromes** (together with pheochromocytoma, neurofibromas, parathyroid adenomas,...)

Clinical picture + diagnostics

- Similar to |differentiated thyroid carcinoma,
- secretes the calcitonin (marker),
- is more aggressive than differentiated carcinoma, at the time of diagnosis there are metastases in more than 50% of cases,
- in medullary thyroid carcinoma in connection with MEN 2A and MEN 2B syndromes vanillic acid is measured,
- 50% of medullary ca produces CEA (carcinoembryonic antigen).

Therapy

Total thyroidectomy, external irradiation (C cells do not accumulate iodine), chemotherapy.

Prognosis

Despite the aggressiveness, the prognosis is favorable - 75% of patients survive 15 years.

TNM classification

TNM of thyroid tumors

Primary tumor size

TX	cannot be evaluated
T0	not found
T1	less than 2 cm
T2	more than 4 cm
T3	over 4 cm or minimal spread outside the thyroid gland
T4	grows outside the thyroid gland

Lymph node involvement

NX	cannot be evaluated
N0	without finding
N1	with a finding
N1a	only nearby nodes on the tumor side
N1b	finding on the other side or more distant

Distant metastases

MX	cannot be determined
M0	are not present
M1	are present

Links

References

- DÍTĚ, P., et al. *Vnitřní lékařství*. 2. edition. Prague : Galén, 2007. ISBN 978-80-7262-496-6.
- KLENER, P, et al. *Vnitřní lékařství*. 3. edition. Prague : Galén, 2006. ISBN 80-7262-430-X.
- BENEŠ, Jiří. *Studying materials* [online]. ©2007. [cit. 2014]. <<http://jirben.wz.cz>>.

References

1. KEUTGEN, Xavier M – SADOWSKI, Samira M – KEBEBEW, Electron. Management of anaplastic thyroid cancer. *Gland Surg* [online]. 2015, y. 4, no. 1, p. 44-51, Available from <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4321056/?tool=pubmed>>. ISSN 2227-684X.

Kategorie:Vnitřní lékařství Kategorie:Endokrinologie Kategorie:Onkologie Kategorie:Otorhinolaryngologie
Kategorie:Chirurgie Kategorie:Patologie