Rare tumors of mediastinum- Case 4

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A 86-year old female patient with pleural effusion and mass in mediastinum was admitted for further investigations.

She had long-lasting swallowing problems and until now has refused operational procedures.

Needle biopsy was performed.
CK 19

Positive:
CK
CK19
CK7

Negative:
CK20
TTF-1
CHR
SYN
CD56
LCA
CD5

Ly TdT negative
Diagnosis
Diagnosis

Tumor tissue, most consistent with type A thymoma
➢ Resection was performed

➢ Partially encapsulated tumor

➢ 9.5 cm in diameter

➢ Infiltration of thoracic wall
Lobulated
Spindle cells
Rosettes
Spindle cells
Rosettes
Spindle cells
Oval cells
Rosettes

13M/2 mm²
No necrosis
Lymphovascular invasion
Diagnosis
Diagnosis

Atypical type A thymoma
Type A thymoma

- Thymomas are generally rare
- Type A - approximately 11.5% of all thymomas
- mean age 64 (older patients than in other thymomas)
- Etiology still not clear

- In anterior mediastinum
- Usually encapsulated or well circumscribed
- Cut surface white to tan

Excellent prognosis by R0:
5y survival 90%,
10y survival 80% (ITMIG)
Type A thymoma- growth pattern

- Lobulation with thick fibrous fascicles
- Microcystic
- Rosette
- Haemangiopericytoma-like
- Glandular structures
- Glomeruloid structures
- Fascicular and storiform growth
Type A thymoma- histology

- Highly cellular
- Spindle, oval-shaped cells
- Bland nuclei, inconspicuous nucleoli

- Low mitotic activity <4 M/2 mm²
- Very few immature (TdT positive) lymphocytes

(Of NOTE- if moderate infiltrate of TdT in 10% of the tumor area, or any TdT positive lymphocyte dense areas- classified as type AB thymoma)
Type A thymoma- immunohistochemistry

- Cytokeratins variably expressed
  - CK19 usually positive
  - CK20 negative
  - P63 positive

- CD20 positive in epithelial cells in cca 50% of type A and AB thymomas
- PAX8 positive in thymomas and thymic carcinomas

- TdT- for quantification of T lymphocytes
- CD5 and CD117- to rule out thymic carcinoma
Typa A thymoma, atypical variant

- Added to the WHO classification of type A thymoma family in 2015
- Several reports about type A thymoma with aggressive behavior and relapses
- Pathological characteristics:
  - Mild to moderate nuclear atypia
  - Increased mitotic count
  - Necrosis

Typa A thymoma, atypical variant

- Relapse and metastases in 43% of atypical type A thymoma
- Mean time to metastases 39.7 months (7–107 months)
- Lung metastasis in 5/10, liver metastasis in 4/10.
- Metastases more frequent with R0 or close (<1 mm) surgical margin
- In this publication only necrosis is a predictive factor of tumor relapse

Ki-67 correlates with the tumor aggressiveness in thymic epithelial neoplasm

Ki-67 index in type A thymoma 0.3–11.0 % (median 3.0) and in thymic carcinoma 12.2–43.3 % (median 23.2 %)

The correlation between Ki-67 and tumor relapse in thymoma is not confirmed, but careful postoperative follow-up may be essential in atypical type A thymoma variant.

Further development
Further development

- Breast carcinoma, 2002 and 2005
- Colon carcinoma 2010
Diagnosis

Atypical type A thymoma
Final diagnosis

Metastasis of breast carcinoma
CLINICAL INFORMATION IS (sometimes) VERY IMPORTANT
Thank you for your attention