

# Tumors of the mediastinum

**Tumors of the mediastinum** are relatively rare, but their incidence has a gradually increasing tendency. They are often asymptomatic, mostly benign.

## Anatomical notes

### boundaries

- cranial - thoracic aperture
- caudally - diaphragm
- dorsally - spine
- ventrally - *sternum*

### distribution

see Mediastinum

## Epidemiology

The incidence of mediastinal tumors in the Czech Republic was 1.1/100,000 inhabitants in 1998. They most often appear between the ages of 30 and 50. From the total number, only one-third show malignant behavior.

## Causes and symptoms

- Asymptomatic (up to 90% benign); often accidentally found on X-ray;
- cough;
- stuffiness;
- recurrent respiratory infection;
- dysphagia;
- pressure to pain in the chest;
- Horner syndrome;
- systemic symptoms: myasthenia gravis, hypertension, hypercalcemia etc.

## Clinical symptoms common to all tumors of the mediastinum

- Superior vena cava syndrome
  - cyanosis;
  - neck swelling (Stokes collar);
  - formation of venous collaterals;
  - congestion in cerebral vessels causing a headache.

## Types of mediastinal tumors

- *Anterior mediastinum*: thymomass, thyroid tumors + parathyroids, teratomass, germ carcinomas and lymphomass;
- *middle mediastinum*: primary and secondary heart tumors, benign and malignant mesenchymal tumors, malignant lymphomas, bronchiogenic cysts;
- *posterior mediastinum*: neurogenic tumors (neurofibroma, neurosarcoma, ganglioneuroma, neuroblastoma, paraganglioma).

## Diagnostics

- Anteroposterior + lateral chest X-ray;
- CT, US, contrast examination of the esophagus, angiography;
- scintigraphy <sup>131</sup>I;
- mediastinoscopy (biopsy).

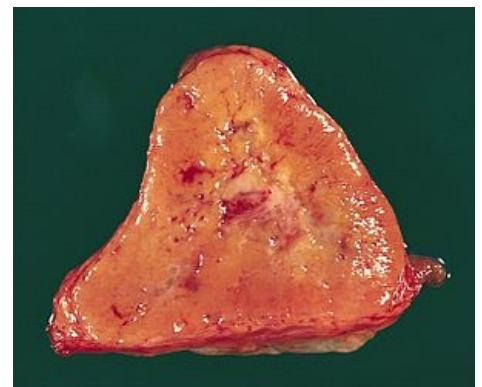
## Treatment

- Ch. surgical; stent;
- thymomas radio- + chemosensitive (cisplatin).

## Tumors of the thymus



Anterior mediastinal mass thymoma diagram



Mediastinal paraganglioma

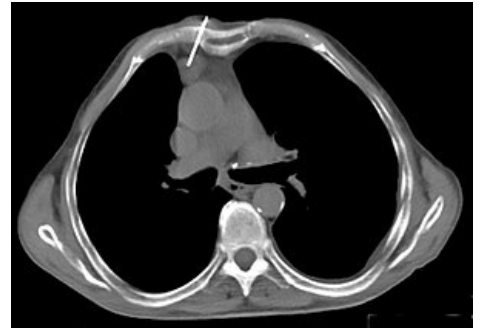
They can originate from epithelial cells (thymic carcinoma), lymphocytes (lymphoproliferation), or from chromaffin cells (carcinoid).

## Thymomas

They occur equally in adulthood in both sexes. The incidence in the Czech Republic in 1998 was 0.1/100,000. Malignant variants can metastasize to the lungs and nodes and grow into surrounding structures.

### Causes and Symptoms

- Often accidentally found on a chest X-ray;
- myasthenic syndrome;
- aplasia red lines;
- hypogammaglobulinemia;
- associated autoimmune diseases – lupus erythematosus, rheumatoid arthritis.



Thymom - CT biopsy

### Diagnostics and Treatment

#### Diagnostics

- Skiagram of the chest;
- CT;
- MR;
- histopathological examination – transcutaneous or transbronchial puncture biopsy;
- there is no TNM classification, we evaluate according to **Masaoka'**:

Stadium	Characteristics
I	macroscopically completely encapsulated, microscopically without capsular invasion
II	macroscopic invasion into surrounding fat tissue or pleura, microscopically capsular invasion
III	macroscopic invasion into surrounding organs (pericardium, lungs, large vessels)
IVA	spread to the pleura or pericardium
IVB	lymphogenic, hematogenous metastases

#### Treatment

- surgery – complete resection possible only for stage I and II;
- radiotherapy;
- chemotherapy - cisplatin, ifosfamide (neoadjuvant or palliative);
- combination.

#### Prognosis

- encapsulated forms - 90%
- invasive forms - 50%
- stage IV – 11%

## Other thymic tumors

- Carcinoid – aggressive growth, metastasis to liver and bone, paraneoplastic syndrome (Cushing's syndrome), often part of MEN-I or MEN-II;
- germ tumors – rarely seminomas, non-seminomas;
- malignant lymphomas - rarely.

## Heart Tumors

Heart tumors are divided into primary, which are very rare, and secondary, which are more common.

 For more information see *Heart tumors*.

## Tumors in the posterior mediastinum

They are manifested by the so-called posterior mediastinal syndrome:

- Irritating cough, shortness of breath, stridor induced by tracheal compression;
- dysphagia from esophageal oppression;
- neuralgia and root pain;
- Horner's syndrome in sympathetic disorder;
- signs of spinal cord compression.

### **mesenchymal tumors**

- lipoma (liposarcoma)
- rhabdomyoma (rhabdomyosarcoma)
- fibroma (fibrosarcoma)

### **neurogenic tumors**

- malignant schwannoma
- neurofibrosarcoma
- neuroblastoma
- chemodectoma

## **Links**

### **Related articles**

- Mediastinum
- Lung tumors

### **References**

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