Thymoom: van maximaal tot minimaal invasieve behandeling

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ITMIG
International Thymic Malignancy Interest Group

2nd ITMIG Supplement on Global Standards and Definitions for Thymic Malignancies:
Editors: E M Maron, F C Delahay
IASLC/ITMIG Proposals for an Evidence-Based Stage Classification System
Standard Definitions for Mediastinal Diseases
Practical Guides for Clinicians
Highlights from the ITMIG Education Committee

Wolters Kluwer Health
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Thymoma:

from maximally to minimally invasive

mediastinal compartments
8th TNM: stage classification

thymoma: surgical treatment
  - sternotomy - thoracotomy
  - clam shell incision
  - thoracoscopy (VATS) - robotic surgery (RATS)

conclusions
Thymoma: from maximally to minimally invasive

- mediastinal compartments
  8th TNM: stage classification

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- conclusions
Carter BW. A modern definition of mediastinal compartments. JTO 2014; 9 (suppl.2) S97-101
prevascular
visceral
paravertebral

Carter BW. A modern definition of mediastinal compartments. JTO 2014; 9 (suppl.2) S97-101
Thymomas

- 30 – 60 years, ♂ = ♀
- 50% of prevascular (anterior) mediastinal tumours
- 50% symptomatic myasthenia gravis
dyspnea, cough, retrosternal pain
- myasthenia gravis 60-70 % thymic hyperplasia
- 10-20 % thymoma
- paraneoplastic syndrome
## TNM - stage grouping

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<tr>
<td></td>
<td>T any</td>
<td>N any</td>
<td>M1b</td>
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- conclusions
Thymoma - surgical treatment

**complete resection!**

*keep the capsule intact! (resectable – no biopsy)*

- **stage I** resection excellent long-term survival recurrences 2-12%
- **stages II, IIIa-b** resection + PORT
- **stages IVa-b** chemotherapy, radiotherapy, surgery
  - *invasive tumor, locoregional extension:*
  - induction chemotherapy, surgery, PORT
Surgical approaches to mediastinum

**Median sternotomy**

**indication**
- cardiac surgery
- pulmonary resection
  - bilateral
- prevascular mediastinal tumours

**anaesthesia**
- double lumen endotracheal tube
- thoracic epidural catheter
54-year-old ♀ cardiomyopathy
chest CT tumour 11cm
prevascular + visceral mediastinum
pathology: cavernous haemangioma
Lateral thoracotomy
54-year-old ♂ chest pain, cough
chest CT: large tumour mediastinum – L hemithorax
54-year-old ♂ chest pain, cough
chest CT: large tumour mediastinum – L hemithorax
L thoracotomy
pathology: encapsulated thymoma B1
Surgical approaches to mediastinum

clam shell incision

bilateral anterior thoracotomy

approach to prevascular mediastinum

+ both pleural cavities
Prevascular tumor

61-year-old ♂

- diffuse muscular complaints
- incidentally found large prevascular tumour
- cardiac ultrasound: no invasion, hypertrophic left ventricle, good systolic function
- EMG: strongly suggestive of myasthenia
- PET scan: slight uptake ant. mediastinal tumour diffuse tracer uptake skeletal muscles: paraneoplastic?
Paraneoplastic symptoms
Prevascular tumor

61-year-old ♀
- transthoracic puncture: suggestive of cortical thymoma
- thymectomy by clam shell incision
- intrapericardial dissection; wedge excision R lung
Prevascular tumor

61-year-old ♀

- pathology: cortical thymoma WHO B2; capsular invasion
- uneventful postoperative recovery
- PORT
Surgical approaches to mediastinum

VATS (thoracoscopy)
Surgical approaches to mediastinum

RATS (robotic)
da Vinci Intuitive® system
Robotic surgery (RATS)

- 48-year-old ♀
- myasthenia gravis
- further examinations:
  - antibodies ACH receptor ↑ (12.0 nmol/L)
  - single-fibre EMG: confirmation myasthenia gravis
  - chest CT scan: prevascular mediastinal tumour
Robotic surgery
Robotic surgery

- pathology: thymoma B2 ø 7 cm; capsular invasion, clear margins
- postoperative course uneventful
- PORT 66 Gy

- follow-up chest CT 07/2017: postoperative status, postirradiation fibrosis
Robotic surgery
Robotic surgery

- largest experience robotic surgery thymoma
- thymoma 64 cases
  thymoma + MG 53

- left-sided approach favoured 30° scope
- difficult situations: encasement of left phrenic nerve
cervical thymus between anonymous
  vein and aorta
- literature review: recurrence thymoma 0 - 11.1%
  but long follow-up time needed!

Systematic review – meta-analysis

- comparison minimally invasive surgery (MIS) ↔ open thymectomy for thymic malignancies
- studies 1995 - 2014
- end-points: blood loss, operative time, complications, LOS, R0, recurrence
- 516 references → 30 studies 2038 patients
- Masaoka stage I + II 95% MIS ↔ 79% open
- mean tumour size 4.1 cm MIS ↔ 4.8 cm open
- 1355 MIS cases 32 conversions (2.4%)

Friedant AJ et al. J Thorac Oncol 2016; 30-8
Systematic review – meta-analysis

- 1 † open group
- MIS: less blood loss, ↓ LOS, no Δ complications
- Masaoka stage I + II: no Δ R0 – overall recurrence
- selected pts with thymic malignancy:
  - MIS safe procedure
  - similar oncological outcomes

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Thymoma:
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- sternotomy
- thoracotomy
- VATS, RATS

prevascular mediastinum
visceral - paravertebral mediastinum
minimally invasive approaches
thymectomy - myasthenia gravis
benign lesions (hyperplasia)
selected thymomas

adapt to patient and his specific lesion!
personalised therapy