COMBINED EN BLOC VERTEBRECTOMY AND CHEST WALL RESECTION FOR PRIMARY TUMORS AND SOLITARY METASTASES OF THE SPINE

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Introduction

- sarcomas/lung cancers invading the chest wall and the spine are often considered as non-resectable
- chest wall tumors with vertebral body involvement/invasion are thought to have a poor prognosis
- best controlled by wide, en bloc resections of (full-thickness) chest wall and partial total vertebrectomy
- role of neo-(adjuvant) radio-/chemotherapy is increasing

Komagata M. et al. Total spondylectomy for en bloc resection of lung cancer invading the chest wall and thoracic spine, J Neurosurg (Spine):353-57, 2004


Objective

- description of oncosurgical resection technique and treatment results
- assess oncological outcome of sarcomas and solitary metastases
Methods

retrospective study
• 2002 – 2009, n = 20 patients (♀:♂ = 8:12, age: 52 years (range: 27-76))

histology:
• primary tumors n = 17:
  sarcoma n = 10, giant cell tumor n = 1, PNET n = 2, malign. histiocyteoma n = 1, aggressive fibrous dysplasia n = 1, pancoast tumor n = 1, plasmocytoma n = 1

• solitary metastatic lesions n = 3:
  rectal-carcinoma n = 1, mamma-carcinoma n = 1 , renalcell-carcinoma n = 1

preoperative diagnostic staging:
• X-ray, CT scan, Scintigraphy (nucleid bone scan), PET-CT, spinal angiography

neo-adj. treatment:
• radiotherapy (n = 5), chemotherapy (n = 9)
Results I

- **rib resection**

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<th>rib resection</th>
<th>1</th>
<th>2</th>
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<tr>
<td>n</td>
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<td>7</td>
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- **vertebra resection**: en bloc spondylectomy n = 13, hemivertebrectomy/sagittal resections n = 7

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- **partial lung resection**: n = 6

- **chest wall defect reconstruction**:
  - Gore-tex patch n = 10
  - Muscle flap n = 1 (latissimus dorsi)
Results II

- **operation time:** 463 minutes (153 – 840)
- **blood transfusions:** 16 units (0 – 52)
- **stay intensiv care unit:** 14 days (2 – 100)
- **complications:** 8/20 patients (40%)
  - wound healing disturbance
  - wound infection
  - respiratory insufficiency/ pulmonary infection
  - hematotherax
  - n = 3
  - n = 1
  - n = 3
  - n = 1
- **revisions:** 4/16 patients
- **margins:**

<table>
<thead>
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<td>wide</td>
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Oncosurgical survivals I

Disease specific survival
- Primary tumors
- Solitary metastases

Metastasis free survival
- Primary tumors
- Solitary metastases

Local recurrence free survival
- Solitary metastases
- Primary tumors
Case 1: 29 years, chest wall osteosarcoma involving Th 6
chest wall resection en bloc with total or partial vertebrectomy is possible with adequate margins using total or sagittal resections

anterior surgery is required if large vessels, lung or mediastinal structures need to be released or resected

reconstruction of the chest wall defect using goretex-patch

problem with the margins is again the dural contact
Disclosure declaration

none of the authors has any potential conflict of interest
2nd CHARITÉ SPINE TUMOR DAYS
Multiple and solitary metastatic disease of the thoracolumbar spine - modes of resection and types of reconstruction

save the date!
20th-21st of May 2011
Berlin/Germany

www.spine-tumor.com