Approaches for SSTs:
What is Transmanubrial Osteomuscular Sparing Approach?

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Where Is Superior Sulcus?

Classic SST = Apical Lung Cancer Invading "Superior Sulcus"

So Called SST = Apical Lung Cancer Invading Any Part of Chest Wall
Parts of Thoracic Inlet

Anterior approach: A, A+M, M (with vascular invasion)

Rusch VW. Lancet Oncol 2006;7.
Tumor Location and Type of Approach

Anterior approach
Anterior Approach

Indication: Invasion to the anterior portion of 1st rib, sternum, or subclavian artery/vein is evident, and operative field of thoracic inlet needs to be established.

How to open the “SUBCLAVIAN SPACE”
SUBCLAVIAN SPACE

SUBCLAVIAN A

Tumor
Variations of Anterior Approach

- Transclavicular (Dartvelle)
- Trans-sternal (Masaoka)
- Transmanubrial (Grunenwald)
Trans-sternal Approach

Masaoka A. JTCS 1979;78.
Trans-sternal Approach

This approach cannot expose the subclavian space.
Trans-Claviculoar Approach

- Removal of the inner half of the clavicle.
- Best exposure of the subclavian space!

Dartevelle PG. JTCS 1993;105.
Preserving the clavicle

Sternoclavicular pseudo-joint formation

Nazari S. JTCS 1996;112.
Marshall MB. JTCS 2006;131.
Transmanubrial Approach
Dr. Grunenwald’s Inspiration!!

Grunenwald D. ATS 1997;63.
Transmanubrial Approach
Transmanubrial osteomuscular sparing approach

- Preserve sternoclavicular joint.
- Provides the good view of subclavian space.
- Well balanced approach
Transmanubrial Approach: Sternal Split for Hilar Manipulation
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Transmanubrial Approach: Sternal Split for Hilar Manipulation
Transmanubrial Approach: How to Deal with Sternocleidid Muscle
Transmanubrial Approach: For the Subclavian Artery Clamp
Transmanubrial Approach: For the Subclavian Artery Clamp
Transmanubrial Approach:
For the Subclavian Artery Reconstruction
Transmanubrial Approach:
For the Subclavian Venous Resection
Transmanubrial Approach
Transmanubrial osteomuscular sparing approach

• Used for SST invading the anterior part of the chest wall and/or subclavian artery/vein.

• Purpose of this approach is to open the SUBCLAVIAN SPACE.

• Good aspects of transmanubrial approach is:
  • Preservation of the sternoclavicular joint
  • Good view of subclavian space

• Best approach ensuring an excellent postoperative shoulder joint motion and chest wall rigidity.
Tumor Location and Type of Approach

- **Posterior approach:**
  M (without vascular invasion), M+P, P

- **Lateral approach:**
  M (without vascular invasion)

- **Anterior approach:**
  A, A+M, M (with vascular invasion)

- **Anterior+Posterior approach**
  A+M+P

National Cancer Center