Posterior Thoracic Corpectomies with Cage Reconstruction for Metastatic Spinal Tumors: Comparing the Mini-Open Approach to the Open Approach

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Background

- Spinal metastasis most commonly affects the vertebral bodies of the spinal column.
- Commonly, an open posterior approach is taken to perform a transpedicular, costotransversectomy, or lateral- extracavitary corpectomy.
- Less invasive approaches such as the mini-open approach may decrease morbidity and shorten recovery time.
Methods

- **AIM:** compare outcomes of patients who undergo mini-open vs. traditional open transpedicular corpectomy for spinal metastases in the thoracic spine

- Retrospective comparative study

- Consecutive cohort from 2006 to 2013

- Chi-square test and two-tailed t-test were used to compare perioperative and follow-up outcomes between the two groups:
  - Operative time
  - Estimated blood loss
  - Complications
  - Neurological status (ASIA)
  - Revision/reoperation
Mini-open Technique

- **Open** transpedicular corpectomy: traditional exposure over level of corpectomy and instrumentation levels

- **Mini-open** transpedicular corpectomy: midline facial dissection only over the corpectomy level of interest and percutaneous instrumentation above and below that level
Mini-open Technique
Mini-open Technique
Same skin incision, but different facial opening
Results

- Total of 49 patients
  - 21 mini-open
  - 28 open
- Well matched cohort. No significant differences in:
  - demographics
  - comorbidities
  - preoperative neurological status (ASIA score)
  - tumor type
  - number of corpectomies performed
  - number of levels instrumented
- No difference in operative time: open (413.6 minutes) vs. mini-open (452.4 minutes) (p=0.329).
Results

Mini-open group had significantly:
- shorter hospital stay (11.4 days vs. 7.4 days, \( p=0.001 \))
- less blood loss (1697.3 cc vs. 917.7 cc, \( p=0.019 \))

Mini-open group trended towards:
- lower perioperative complication rate (9.5% vs. 21.4%) (\( p=0.265 \))
- lower infection rate (17.9% vs. 9.5%) (\( p=0.409 \)).

At follow-up, no differences in: ASIA score (\( p=0.342 \)), complication rate after the 30-day postoperative period (\( p=0.999 \)), and need for surgical revision (\( p=0.803 \)).
The mini-open transpedicular corpectomy:

- is a viable option
- maybe associated with lower morbidity and hasten recovery
- offers similar follow-up outcomes as the traditional open approach
Disclosure

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