

P33

Anterior Corpectomy versus Posterior Pedicle Screw Fixation with 5.5 mm Rods for Metastatic Spinal Tumor Located in the Cervicothoracic Junction

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Backgrounds: This study compared the efficacy of posterior pedicle screw with 5.5 mm rods (PPSF5.5) with anterior corpectomy (AC) for metastatic cervicothoracic junction (CTJ) tumors.

Research question: Can 5.5 mm rods enhance the efficacy of cervical pedicle screw for metastatic tumor surgery?

Design: Retrospective comparative analysis

Methods: This study included patients with CTJ tumors who underwent PPSF5.5 or AC from January 2000 to December 2023. Data collected included demographics, surgical details, clinical outcomes (visual analog scale scores for neck or back pain, Spinal Instability Neoplastic Scale score, McCormick scale, Nurick grade, and Eastern Cooperative Oncology Group score), radiologic results (cervical segmental angle), and surgical complications (instrumentation failure, tumor regrowth, and wound infection).

Results: The AC group showed a tendency for short-level fusion. Patients in this group had tumors primarily located near C7 and generally confined to the vertebral body. AC was associated with more significant post-operative kyphotic changes in the index vertebra during follow-up than PPSF5.5. Moreover, AC was associated with a higher incidence of instrumentation failure, necessitating revision surgeries. Conversely, patients in the PPSF5.5 group tended to require revision surgery due to tumor regrowth. (Figure 1 and 2)

Discussion: For CTJ metastatic tumors, PPSF5.5 provides superior resistance to forward bending and collapse prevention and minimizes instrumentation failure rate compared to AC. Moreover, AC may reduce the risk of tumor recurrence, but this approach is recommended only if the tumor is confined to the vertebral body and located at the upper level of the CTJ.

Fig. 1

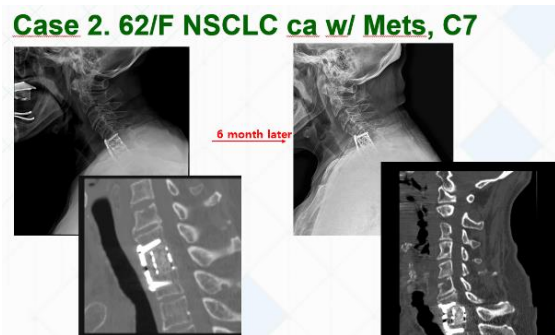


Fig. 2

Case 3. 77/M Prostate ca w/ Mets, T1

