Anterior Cervical Reconstruction with Pedicle Screws after Four-Level Corpectomy -A Report of Seven Cases-

Minoru Ikenaga
M Mukaida, R Nagahara, N Tsubouchi, Y Nakagawa
Dept. of Orthopedic Surgery
Kyoto Medical Center, Kyoto, Japan

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Reconstruction Failure after Multilevel Anterior Corpectomy

- Graft dislodgement
  - >50% Plate fixation for > 3-level corpectomy (Sasso, 2003)
  - 0% with Halo-vest for > 3-level corpectomy (Ikenaga, 2006)
Materials

• Etiology: Seven cases of cervical myelopathy due to 4 OPLL, 3 CSM
• Age: 50-67 yo
• Gender: 3 male, 4 female
Anterior Pedicle Screwing Technique

• Preoperative planning on CT
  - Decompression width (especially for OPLL cases)
  - Screw angle: 40-45° from sagittal plane
  - Screw length: 20mm
  - Screw diameter: 3.5mm φ

VA
Spinal cord
corpectomy
40-45°
Operative Technique

- Rod placement
- Graft impaction
- Plate fixation on both ends of the graft
- High density polyethylene (HDP) cable tightening around the rod and the graft
65 y.o. Female with OPLL

Preoperative JOA score: 11/17 points
Postop X-rays and CTs

Preoperative view

Fibular strut

'Floated' OPLL

VA
Possibility of Severe Complication Related with PS

- PS insertion under direct vision
  ➔ Very low risk of damaging spinal cord or vertebral artery

Op time : 182 min (149-248)
Blood loss : 271 g (110-660)
No Infection, No graft failure
No deterioration of neurological status
No massive bleeding
Reconstruction Failure after Multilevel Corpectomy

- Is due to: Significant instability after multilevel corpectomy

Four vertebrae connected with PS could serve as another strut

→ No reconstruction failure
Other Indications of Anterior PS Technique

-severe kyphosis with instability-

85yo F
Progressive myelopathy

2 level corpectomy + PS
Fibular strut graft
Other Indications of Anterior PS Technique

- progressive myelopathy due to postlaminectomy kyphosis -

71yo M
Progressive myelopathy after laminectomy

3-level corpectomy + PS
Fibular strut graft
Conclusion

1. We presented seven cases of anterior cervical reconstruction technique with pedicle screws after four-level corpectomy.
2. We experienced no significant complication.
3. The technique was thought to be safe and provided excellent stability for reconstruction after a multilevel corpectomy.