



INSTRUCTIONAL LECTURES & PANEL PRESENTATIONS

ATLANTOAXIAL TRANSARTICULAR FIXATION USING ATLASCLAW OF OLERUD CERVICAL

Takeshi Fuji, M.D.

Institution(s):

Department of orthopaedic Surgery, Osaka Koseinenkin Hospital, Osaka, Japan

Posterior atlantoaxial transarticular screw fixation was introduced by Magerl and Seemann. Several authors reported the advantages of this technique and the good clinical results.

Olerud Cervical is the unique cervical instrumentation developed by Dr. Sven Olerud. Especially an atlasclaw is the clawing device of the atlas.

From 1997 to 1999, there were 20 patients who underwent atlantoaxial fusion using atlasclaw of Olerud Cervical. There were 6 males and 14 females. The age at operation ranged from 14 to 71 and the follow up duration was from 12 to 37 months. Diagnoses were rheumatoid arthritis in 15 patients, os odontoideum in 4 and Down syndrome in 2.

Atlasclaw was used to grab the posterior arch of the atlas in all cases. Fixation method of the axis varied in each case. Postoperative loss of correction and bone union were evaluated.

Fixation methods of the axis are shown in the slides. Transarticular screw fixation was performed at 35 sides in 19 cases. Failure of transarticular screw insertion was seen in one os odontoideum case. The cause of the failure was inadequate reduction of posterior subluxation. Preoperative CT examination revealed the risk of the injury of vertebral artery during screw insertion, grabbing the lamina of the axis by hooks was performed at 5 sides in 4 cases.

Loss of correction after the operation was seen in one case. In that case, hooks were used to fix

the axis instead of transarticular screw fixation due to high riding of the vertebral artery in both sides. Union was defined when there was no movement in flexion-extension radiograms without instrumentation failure. Union rate was 100%, but it is impossible to confirm the consolidation between the graft and the laminae because of shades of the atlas claw.

This is a case of high riding of the vertebral artery, so we performed atlantoaxial fixation using the atlasclaws and the hooks.

Atlasclaw of Olerud Cervical is a useful instrumentation for grabbing the posterior arch of the atlas. If the atlantoaxial transarticular screw fixation is performed even in one side, rigid atlantoaxial fixation will be achieved.

In summary, twenty cases with atlantoaxial fixation using atlasclaw of olerud Cervical were evaluated. Atlantoaxial transarticular screw fixation was performed bilaterally in 16 cases. Hook fixation of the axis was done at 5 sides in 4 cases. bone union was achieved in all cases. Loss of correction was recognized in one case with bilateral hook fixation of the axis. Rigid fixation was achieved even in the case with unilateral transarticular screw fixation without perforation of the anterior cortex of the anterior arch of the atlas. Atlasclaw of Olerud Cervical is the useful instrumentation for atlantoaxial fixation.