

Abstract #563.docx

TAKING CARE OF THE O-C2 ANGLE DURING OCCIPITOCERVICAL FUSION TO PREVENT DYSPNEA AND/OR DYSPHAGIA AFTER OPERATION

Introduction/Aim

It has been reported that patients with a change in O-C2 angle (OC2A) of less than -10° developed dyspnea and/or dysphagia after occipitocervical fusion (OCF). Moreover, the difference in the OC2A before and after surgery is linearly correlated with the percentage change in the cross-sectional area of the oropharynx. Therefore we performed OCF without a remarkable decrease in OC2A angle. The objective of this study was to evaluate the benefit of taking care of the OC2A during OCF for dyspnea and/or dysphagia after operation.

Materials and Methods

Nine consecutive patients who received OCF were included in this study. The medical records of the patients were reviewed retrospectively. Patients were fixed in the prone position using the Mayfield, and the OC2A was then measured on x-ray photograph (X-P). The OC2A was maintained at more than -10° compared to that shown on the preoperative X-P in the neutral position. All patients did not require reduction of atlanto-axial subluxation (AAS). Evaluated factors were the following: OC2A, the axial CT cross-sectional area of the oropharynx just cranial to the epiglottis (S), dyspnea and dysphagia.

Results

The average age of patients was 71.1 (28-87) years old. Three patients were male and 6 patients were female. The diagnoses were odontoid fracture in 8 patients and Down syndrome in 1 patient. The difference in the OC2A (dOC2A) was defined as follows: $dOC2A = \text{postoperative O-C2 angle} - \text{preoperative O-C2 angle}$. dOC2A was $-1.3 \pm 5^{\circ}$ ($-8 \sim 7^{\circ}$). The percentage change in the cross-sectional area (%dS) was defined as follows: $\%dS = (S \text{ postoperative} - S \text{ preoperative}) / S \text{ preoperative} \times 100 (\%)$. %dS was 13.8 ± 59.6 . No patients developed any dyspnea or dysphagia; however, 1 patient had aspiration pneumonia after operation in ICU, and her pneumonia improved immediately after antibiotic therapy.

Discussion

In the present study, all patients whose dOC2A was intentionally more than -10° did not develop dyspnea and/or dysphagia after surgery.

Conclusion

Taking care of the OC2A during OCF without reduction of AAS may prevent dyspnea and/or dysphagia after OCF.