

Abstract #1306.docx

INTRAOPERATIVE CORRECTION OF THE O-C2 ANGLE CAN PREVENT DYSPHAGIA AND/OR DYSPNEA AFTER OCCIPITOCERVICAL FUSION SURGERY

Background Dysphagia and/or dyspnea have been recognized as serious complications after posterior occipitocervical (O-C) fusion surgery. Previous reports showed that postoperative dysphagia/dyspnea occasionally occurred when patients' O-C2 angle decreased after surgery. To avoid these complications, we performed intraoperative correction of the O-C2 angle.

Objective We measured the amount of the intraoperative correction of the O-C2 angle, and evaluated the efficacy of intraoperative correction of the O-C2 angle to prevent postoperative dysphagia/dyspnea.

Methods We analyzed 10 consecutive patients who underwent O-C fusion between January 2012 and May 2014. The sample population consisted of 1 male and 9 female patients with a mean age of 63.2 years (range, 27–73 years). The O-C2 angles at the neutral, flexion, and extension positions were evaluated by using preoperative lateral radiographs. We decided the ideal postoperative O-C2 angle individually to be larger than that at the preoperative neutral position. During surgery, we checked the O-C2 angle by using fluoroscopic lateral radiography immediately after the placement of occipital and spinal anchors such as occipital plate and cervical pedicle/lateral mass screws. We then rotated the head posteriorly and corrected the O-C2 angle. When the corrected O-C2 angle exceeded the preoperative neutral O-C2 angle, we placed the rods and performed final tightening of the instruments. We analyzed the association of the amount of the correction of the O-C2 angle with the development of dysphagia/dyspnea after surgery.

Results The mean preoperative O-C2 angle at neutral position was 11.8° (range, -5° to 26.9°). After anchor placement, the angle was 9.7° (range, -4° to 32°). After the correction, the angle increased to 16.8° (range, 5° to 38°). Postoperative O-C2 angles were increased without any neurological deficits in all 10 patients. Dysphagia/dyspnea did not develop in any patients.

Discussion Considering the results of our study, our method of intraoperative correction of the O-C2 angle could ensure the establishment of O-C fusion surgery.

Conclusions Intraoperative correction of the O-C2 angle is an effective and safe technique to prevent postoperative dysphagia/dyspnea. The O-C2 angle at the preoperative neutral position could be a practical index individually in O-C fusion surgery to prevent postoperative dysphagia/dyspnea.