

Introduction :

It is well known that cervical malalignment, during and after occipito-cervical fusion, may cause dysphagia or dyspnea, because hyperflexion of the cervical spine can cause narrowing the airway and gastrointestinal tract due to mechanical obstruction. The purpose of this study was to analyze whether airway was affected to a large degree by cervical sagittal alignment during posterior cervical surgery using the Airway-Angle.

Research Question :

Were there relationship between the airway and cervical sagittal alignment during posterior cervical surgery in CSM ?

Design :

Retrospective study

Methods :

This study included 36 male and 18 female patients with cervical spondylotic myelopathy, undergoing posterior cervical surgery using the unique skull clamp positioning system that had a scale to adjust the neck position and enable intended cervical sagittal alignment. The average patient age was 64 years (range: 54-82 years). C0-C2, C2-C7, C0-C7 angles, and Airway-Angle were measured on lateral radiographs taken at neutral and flexion neck positions respectively. Airway-Angle was formed by lines using oral and pharyngeal axes that were famous for sniffing position in anesthesiology. The cervical range of motion of dC0-C2, dC2-C7, and dC0-C7 was calculated, and differences between each time point were compared using the t-test.

Results:

Cervical sagittal alignments were obtained quantitatively by rotating an equivalent amount on the scale of skull positioning device. There was a strongly significant different in cervical alignment and Airway-Angle between the neutral and flexion position($p<0.01$). There were relationship between Airway-Angle and C0-C2 and C0-C7 angles.

Conclusion :

Cervical sagittal alignments affected airway during posterior cervical surgery. Therefore, it is important to obtain the quantitative cervical sagittal alignments during the surgery.

