Dropped Head Syndrome: A Treatment Strategy and Surgical Intervention

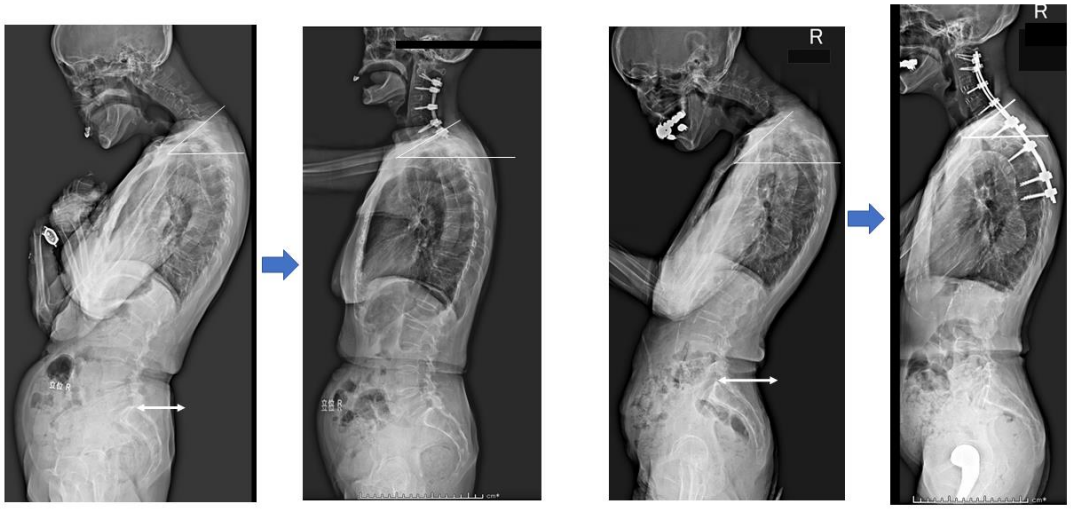
Objective. The pathology of dropped head syndrome (DHS) is diverse, and reports of surgery for DHS are scarce. We aimed to describe surgery for DHS and to investigate the surgical outcomes thereof.

Methods. We enrolled 40 consecutive patients (six males and 34 females; average age at surgery, 72.0 years) with DHS who underwent correction surgeries at a single institute. Short fusion (SF), with the extent of fixation mainly at the cervical region, was performed for 27 patients; long fusion (LF), involving the cervical and thoracic spine, for 13. Clinical and radiological outcomes were investigated, and factors analyzed using the Japanese Orthopedic Association Cervical Myelopathy Evaluation Questionnaire (JOACMEQ).

Results. All patients were able to gaze horizontally at the follow-up. Instances of five transient C5 palsy results, and five distal junctional kyphosis results were found, but no revisions were reported due to recurrence. Patients whose T1 slope-20° was smaller than the C2–7 angle postoperatively exhibited better clinical outcomes in the three domains of the JOACMEQ, regardless of the extent of fixation.

Conclusion. For cases where the T1 slope is relatively small, and approximately 10° of cervical lordosis is predicted to be obtained postoperatively, SF is appropriate. Alternatively, for cases with higher T1 slope, obtaining a cervical lordosis over 20° has a risk of post-operative complications. For such cases, it is an option to perform an LF involving the cervical and thoracic spine.

Figure Legend Left side. 76 years old female. Pre-operative T1 slope was 32 degrees. We aimed to obtain cervical lordosis bigger than 32 minus 20 degrees. Short fusion was performed, and 20 degree cervical lordosis was obtained. Right side. 69 years old female. Pre-operative T1 slope was higher (44 degrees). Long fusion was performed to obtain moderate cervical lordosis (12 degrees) and smaller T1 slope (30 degrees) aiming to be compatible with the formula; cervical lordosis over T1 slope minus 20 degrees. In both cases, SVA became zero after surgery.



SVA -35mm
C2-7 angle -36°
T1 slope 32°

SVA 0mm
C2-7 angle 20°
T1 slope 25°

SVA -40mm
C2-7 angle -40°
T1 slope 44°

SVA 0mm
C2-7 angle 12°
T1 slope 30°