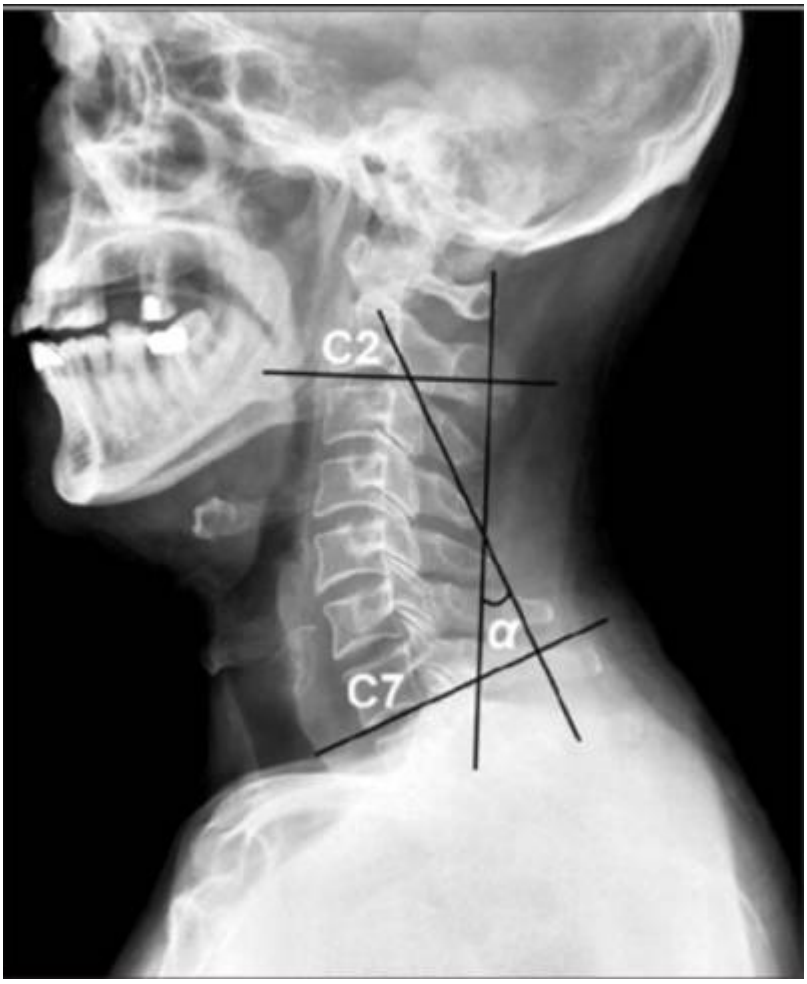
C2-7 Cobb Angle



T1 slope minus C2 C7 angle lordosis (TS-CL) and cervical sagittal alignment reportedly affect health-related quality-of-life (HRQOL) scores following multilevel posterior cervical fusion surgery.

see also C2-C7 sagittal vertical axis

see also T1 slope

see also C7 slope

see also Neck tilt

Expandable cages are frequently used to reconstruct the anterior spinal column after a corpectomy. In a retrospective study, Pojskic et al. evaluated the perioperative advantages and disadvantages of corpectomy reconstruction with an expandable cage.

Eighty-six patients (45 male and 41 female patients, medium age of 61.3 years) were treated with an expandable cervical titanium cage for a variety of indications from January 2012 to December 2019 and analyzed retrospectively. The mean follow-up was 30.7 months. Outcome was measured by clinical examination and visual analogue scale (VAS); myelopathy was classified according to the EMS (European Myelopathy Score) and gait disturbances with the Nurick scale. Radiographic analysis comprised measurement of fusion, subsidence and the C2-C7 angle.

Indications included spinal canal stenosis with myelopathy (46 or 53.5%), metastases (24 or 27.9%), spondylodiscitis (12 or 14%), and fracture (4 or 4.6%). In 39 patients (45.3%), additional dorsal stabilization (360° fusion) was performed. In 13 patients, hardware failure occurred, and in 8 patients, adjacent segment disease occurred. Improvement of pain symptoms, myelopathy, and gait following surgery were statistically significant ($p < 0.05$), with a medium preoperative VAS of 8, a postoperative score of 3.2, and medium EMS scores of 11.3 preoperatively vs. 14.3 postoperatively. Radiographic analysis showed successful fusion in 74 patients (86%). As shown in previous studies, correction of the C2-C7 angle did not correlate with improvement of neurological symptoms.

The results show that expandable titanium cages are a safe and useful tool in anterior cervical corpectomies for providing adequate anterior column support and stability [1].

Design variations of expandable cages for vertebral body replacement do not show any significant effect on the biomechanical results. There was no significant difference found, between the biomechanical properties of expandable and non-expandable cages. After corporectomy, isolated implantation of expandable cages plus anterior plating was not able to restore normal stability of the motion segment. As a consequence, isolated anterior stabilization using cages plus LCDCP should not be used for vertebral body replacement in the thoraco-lumbar spine [2].

1)
Pojskic M, Saβ B, Nimsky C, Carl B. Application of an Expandable Cage for Reconstruction of the Cervical Spine in a Consecutive Series of Eighty-Six Patients. Medicina (Kaunas). 2020 Nov 25;56(12):E642. doi: 10.3390/medicina56120642. PMID: 33255605.
2)
Khodadadyan-Klostermann C, Schaefer J, Schleicher P, Pflugmacher R, Eindorf T, Haas NP, Kandziora F. [Expandable cages: biomechanical comparison of different cages for ventral spondylodesis in the thoracolumbar spine]. Chirurg. 2004 Jul;75(7):694-701. German. PubMed PMID: 15258751.