

# Anterior atlantodental ligament

The anterior atlantodental ligament AADL was found in 81.3% of specimens. The attachment of each ligament was consistent and traveled between the base of the anterior dens to the posterior aspect of the anterior arch of the atlas in the midline and just inferior to the fovea dentis. In 38.5% of specimens, there was some connection between the AADL and the anterior atlanto-occipital membrane. The ligament was roughly 4 × 4 × 4 mm in all specimens. With transection of the transverse ligament, the AADL could be made taut with posterior distraction of the dens. In addition, with left and right rotation of the atlantoaxial joint, the AADL became taut (less than 10°) before any tautness of the alar ligaments in all specimens.

The AADL appears to resist posterior displacement of the dens and, with the alar ligaments, resists rotation. When present, the AADL contributes to the predental space. Knowledge of this ligament may aid in further understanding craniocervical stability and help in differentiating normal anatomy from pathology via imaging modalities <sup>1)</sup>.

<sup>1)</sup>

Tubbs RS, Mortazavi MM, Louis RG, Loukas M, Shoja MM, Chern JJ, Benninger B, Cohen-Gadol AA. The anterior atlantodental ligament: its anatomy and potential functional significance. World Neurosurg. 2012 May-Jun;77(5-6):775-7. doi: 10.1016/j.wneu.2011.09.048. Epub 2011 Nov 1. PubMed PMID: 22120239.

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