

Vertebral artery occlusion

Medullary or upper cervical [spinal cord infarction](#) syndrome following traumatic occlusion of the [vertebral artery](#) has been described with cervical fracture, cervical manipulation, and [calisthenics](#).

Decreased blood flow through the vertebral artery without cervical fracture or dislocation is presumed to occur with hyperextension and/or excessive rotation beyond physiological limits by external forces.

However, the mechanism of arterial occlusion, thrombosis, and infarction has not been clarified from post-mortem or clinical findings.

Doppler ultrasonography and CT angiography allow valuable measurements in the diagnosis of positional VA occlusion. The one-sided destruction of the C1/C2 lateral masses might be a causal factor for VA occlusion in [Rheumatoid arthritis](#) (RA) ¹⁾.

A subset of RA patients developed positional VA occlusion associated with cervical spine involvement ²⁾.

Case reports

A 45-year-old man had rheumatoid arthritis for the last 10 years and presented with symptoms of posterior circulation infarcts. Cervical spine radiographs revealed “mobile” atlantoaxial dislocation and atlantoaxial impaction. Magnetic resonance imaging confirmed odontoid erosions, lateral masses destruction, atlantoaxial dislocation, and atlantoaxial impaction. Angiogram showed occlusion of the left vertebral artery and transient stasis of the right vertebral artery distal to foramen transversarium of C2 vertebra in extension position. The left vertebral artery had narrowing in the same segment in the neutral position. Following traction, repeat angiogram showed no occlusion or narrowing of either vertebral artery in any position. Transoral odontoidectomy and occipitocervical fusion were performed.

The patient had no fresh deficits following surgery.

Garg et al. described a rare case of positional occlusion/stasis of vertebral arteries associated with rheumatoid arthritis, in which angiography following cervical traction showed complete resolution ³⁾.

¹⁾

Yoshitomi H, Neo M, Ito H, Takemoto M, Masaki Y, Nakamura T. Doppler ultrasonography and computed tomography angiography demonstrate positional occlusion of vertebral artery associated with one-sided destruction of the atlantoaxial lateral mass caused by rheumatoid arthritis: a case report. *Spine (Phila Pa 1976)*. 2011 Oct 15;36(22):E1493-6. doi: 10.1097/BRS.0b013e31820053a3. PubMed PMID: 21304427.

²⁾

Tateishi Y, Tagami A, Baba H, Osaki M, Kawakami A, Akira T. Duplex Ultrasonography-Detected Positional Vertebral Artery Occlusion in Upper Cervical Rheumatoid Arthritis. *Spine (Phila Pa 1976)*. 2016 Jan;41(1):26-31. doi: 10.1097/BRS.0000000000001136. PubMed PMID: 26583470.

³⁾

Garg A, Gaikwad SB, Kanodia A, Suri A, Gupta V, Mishra NK. Positional occlusion/stasis of vertebral arteries in a case of cervical rheumatoid arthritis presenting with multiple posterior circulation infarcts: a case report with angiographic demonstration. *Spine (Phila Pa 1976)*. 2004 Aug 1;29(15):E321-5. Erratum in: *Spine*. 2004 Oct 15;29(20):2341. PubMed PMID: 15284528.

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