

## **Trans-articular C1-C2 Fixation following mobilization of high-riding vertebral artery**

**Apurva Prasad, Atul Goel**

Lilavati Hospital and Research Center, Mumbai.

**Background:** Mobilization of intraosseous course of vertebral artery for safe screw insertion into pedicle of axis in cases with high riding vertebral artery is discussed.

**Objective:** To show drilling, exposure, and mobilization of the “high-riding” vertebral artery loop during its course in relationship with superior facet/pedicle of C2 vertebra can provide safety to techniques of atlantoaxial fixation that involve insertion of screws in the pars/pedicle/facet of C2.

**Methods:** During the period June 2016 to December 2021, 21 patients operated for atlantoaxial stabilization underwent vertebral artery exposure and mobilization using the technique discussed. The ages of the patients ranged from 6 to 48 yrs. Six patients had mobile and reducible atlantoaxial dislocation. Nine patients had basilar invagination. Six patients had os-odontoideum. Gentle and precise drilling of bone that covers the “high-riding” vertebral artery can lead to its safe and wide surgical exposure. The arterial loop can then be either completely or partially mobilized out of the vertebral artery groove such that C2 screw insertion can be conducted under direct surgical visualization of the vertebral artery.

**Results:** During the average follow-up period of 14 months, there have been no complications related to the surgical procedure, metal implant, or vertebral artery.

**Conclusion:** Vertebral artery exposure and mobilization is rather simple and safe procedure and is remarkably effective in providing a space for C2 screw implantation.

Apurva Prasad [apurvadoc27@gmail.com](mailto:apurvadoc27@gmail.com)