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Relationship of vertebral artery with atlas and axis vertebrae: A cadaveric study

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Aim: To study anatomy of vertebral artery in relation to atlas and axis, to provide data, helpful in preventing vertebral artery injuries during crania-vertebral surgeries.

Background: With the advent of pedicle screws and other advanced instrumentation, fixation and stabilization of cervical vertebra is possible. However, proximity of vertebral artery poses a unique challenge to surgeons performing these procedures. Vascular complications due to misplaced C1-C2 trans-articular screw, C1 lateral mass and cervical pedicle screw, can result in profound and permanent physical impairment to patients undergoing spinal fusion and instrumentation. Vertebral artery injury can occur during anterior or posterior instrumentation. Anatomical variations in course of vertebral artery are being extensively studied with CT and MR Angiography, but cadaveric studies on vertebral artery, its variations and relation to cervical vertebrae in Indian population are lacking.

Material and methods: The study was carried out in ten cadavers at dissection hall of Anatomy department, AIIMS Rishikesh. The course of vertebral artery on its exit from C3 vertebra to foramen magnum was studied. Measurements of vertebral artery related to vertical segment, horizontal segment, distance from midline and from third cervical vertebra were taken. Position and relations of vertebral artery in foramen transversarium and vertebral artery groove were also recorded. All linear and angular measurements were done with help of digital callipers and goniometer respectively.

Results: Results of the study will be discussed in detail during the scientific session.

Biography

Rashmi Malhotra has 12+ years of teaching experience in the department of anatomy, she is an Associate Professor in the department of anatomy in AIIMS, Rishikesh for past 8 years, she worked as a Senior Lecturer in the department of anatomy from 2007-2009 in Kalka Dental College, Meerut, and as a Lecturer in the field of anatomy in LLRM Medical College, Meerut for 3 years.

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