Anterior spinal artery

- Management and outcomes for thoracic anterior spinal artery aneurysms: illustrative case
- Vertebral artery injury following cervical disc arthroplasty - A systematic review
- Progressive quadriparesis in a young woman due to a spinal perimedullary arteriovenous fistula (PMAVF type IVa) successfully treated with endovascular therapy: A case report
- Endovascular treatment of a craniocervical junction dural arteriovenous fistula associated with lateral medullary syndrome: A case report
- Involvement of the sinuvertebral nerve in the treatment of chronic low back pain through dorsal root ganglion neurostimulation: an anatomical study
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- The Vagoaccessory Triangle (VAT): The Arena of ELITE

The anterior spinal artery is the blood vessel that supplies the anterior portion of the spinal cord. It arises from branches of the vertebral arteries and courses along the anterior aspect of the spinal cord. It is reinforced by several contributory arteries, especially the artery of Adamkiewicz.

The anterior spinal artery arises bilaterally as two small branches near the termination of the vertebral arteries. One of these vessels is usually larger than the other, but occasionally they are about equal in size. Descending in front of the medulla oblongata, they unite at the level of the foramen magnum. The single trunk descends in the front of the medulla spinalis, extending to the lowest part of the medulla spinalis. It is continued as a slender twig on the filum terminale.

On its course the artery takes several small branches (i.e. anterior segmental medullary arteries), which enter the vertebral canal through the intervertebral foramina. These branches are derived from the vertebral artery, the ascending cervical artery, a branch of the inferior thyroid artery in the neck, the intercostal arteries in the thorax, and from the lumbar artery, iliolumbar artery and lateral sacral arteries in the abdomen and pelvis.

The vessel is placed in the pia mater along the anterior median fissure. It supplies that membrane, and the substance of the medulla spinalis, also sending off branches at its lower part to be distributed to the cauda equina.

Case reports

A 7-year-old boy with Down syndrome and atlanto-axial subluxation. The patient presented with an ischemic stroke in the left hemisphere and cervical cord compression with increased cord edema. Diagnostic digital subtraction angiography revealed unique patterns of vascular involvement, with retrograde flow through the anterior spinal artery, ascending cervical artery, occipital artery, and multiple leptomeningeal arteries compensating for bilateral vertebral artery occlusion. This case underscores the underreported phenomenon of upward retrograde flow through the anterior spinal artery in bilateral vertebral artery occlusion. They address the rare manifestation of posterior circulation involvement in moyamoya syndrome, highlighting the importance of considering atlantoaxial instability as a contributing factor, as the absence of atlantoaxial stability is a risk factor for vertebral artery dissection. This study contributes valuable insights into the intricate relationship

of moyamoya syndrome, Down syndrome, and atlantoaxial instability, urging clinicians to consider multifaceted approaches in diagnosis and treatment. It also emphasizes the potential significance of the anterior spinal artery as a compensatory pathway in complex vascular scenarios [1)]

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Abramyan A, Fu AY, Patel K, Sun H, Roychowdhury S, Gupta G. Neurovascular considerations in patients with Down syndrome and moyamoya syndrome. Childs Nerv Syst. 2024 Jan 25. doi: 10.1007/s00381-024-06293-z. Epub ahead of print. PMID: 38273142.