

Anatomo-radiologic study of the Suboccipital artery of Salmon

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The frequency of suboccipital injections to treat cluster and chronic migraine headaches has increased in the last decade. The third segment of the vertebral artery is located in the suboccipital triangle and its main muscular branch, the suboccipital artery of Salmon (SAS), supplies blood to the suboccipital muscles and related tissues. The purpose of this study was to radiographically investigate the morphology of the SAS and its branches, and to document which muscles are supplied by this clinically-relevant blood vessel. Computed tomography angiographs of the brains of 50 subjects (25 female, 25 men) with a mean age of 70.2 years were analysed. The SAS was present in 48% of subjects. The vessel was present bilaterally in 37.1% of subjects, and had a mean (SD) luminal diameter of 1.71 (0.34) mm and mean (SD) length of 36.42 (17.1) mm. The SAS was found to have two morphologic patterns: 1) a single main trunk with collateral branches (52.6%) and 2) a short common trunk that divided into two branches (48.4%). The SAS supplied the obliquus capitis inferior, semispinalis capitis, and splenius capitis muscles. When the SAS was absent, the suboccipital muscles were supplied by a branch of the occipital artery. No anastomoses were found between the SAS and occipital artery. The suboccipital muscles are vascularised by the SAS and occipital artery. The detailed course of the SAS is important for clinicians and surgeons who perform procedures in the suboccipital region.

Key words

CT angiography, vascular anatomy, suboccipital muscle, anatomy, radiologic anatomy, occipital artery.