

# Dorsolateral medullary plexus

Meningeal branches originating from intradural arteries may be involved in several diseases such as meningeal tumors and arteriovenous lesions. These “pial-dural” arterial connections have been described for anterior cerebral, posterior cerebral, and cerebellar arteries. However, to the best of our knowledge, meningeal supply originating from the arterial plexus over the dorsolateral aspect of the medulla oblongata (dorsolateral medullary plexus [DLMP]) has not been described.

**OBJECTIVE:** To define the microsurgical anatomy of the meningeal branch of DLMP.

**METHODS:** A total of 20 cadaver heads (40 sides) underwent far-lateral craniotomy and the cerebellomedullary cisterns were explored to find the DLMP and any meningeal branches. Additionally, de-identified intraoperative images of 85 patients with vertebral artery (VA)/posterior inferior cerebellar artery aneurysms who had undergone far-lateral craniotomy were studied to find any meningeal branches of DLMP.

**RESULTS:** The meningeal branches of DLMP were identified in 4 cadavers/sides. These branches reached the region of jugular tubercle (JT) after crossing the accessory nerve. In 3 specimens, these branches were joined by a small twig from V4-VA before penetrating the dura. DLMP meningeal branches were found in 12 patients of the studied cohort (14%) with similar anatomical features as those found in the cadaveric study.

**CONCLUSION:** DLMP may give rise to meningeal branches to the adjacent dura of JT. The actual prevalence of this anatomic variation is difficult to estimate using our data. However, when present, these branches may have important clinical implications, ie, diseases such as dural arteriovenous fistulas, pial arteriovenous malformations (AVMs), and meningeal-based tumors <sup>1)</sup>.

<sup>1)</sup>

Tayebi Meybodi A, Zhao X, Borba Moreira L, Preul MC, Alhilali LM, Lawton MT. Microsurgical Anatomy of the Meningeal Branch of the Dorsolateral Medullary Plexus. Oper Neurosurg (Hagerstown). 2019 Sep 19. pii: opz283. doi: 10.1093/ons/opz283. [Epub ahead of print] PubMed PMID: 31538202.

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