Transpontomedullary sulcus approach TPMS

The TPMS approach used the far lateral craniotomy and upper vagoaccessory triangle to define the surgical corridor. The entry point was above the olive, lateral to the pyramidal tracts and cranial nerve (CN) VI, above the preolivary sulcus and CN XII, and medial to CNs VII and VIII and CNs IX through XI.

Four patients underwent this approach. All presented with hemorrhage and CN VI palsies. All pontine CMs were resected completely. Three patients were improved or unchanged, with good outcomes (modified Rankin Scale score ≤2) in all patients.

The central pons remains difficult territory to access, and new surgical corridors are needed. The bulging underbelly of the pons allows access to pontine lesions deep to the pial surface from below. The far lateral TPMS approach is a novel and more direct alternative to the retrosigmoid transmiddle cerebellar peduncle approach. Unlike the retrosigmoid approach, the TPMS approach requires minimal parenchymal transgression and uses a brainstem entry point medial to most lower CNs. Favorable results demonstrate the feasibility of resecting pontine CMs that might have been previously deemed unresectable [1)].

1)
Abla AA, Benet A, Lawton MT. The far lateral transpontomedullary sulcus approach to pontine cavernous malformations: technical report and surgical results. Neurosurgery. 2014 Sep;10 Suppl 3:472-80. doi: 10.1227/NEU.0000000000000389. PubMed PMID: 24762704.