

THE PARADIGM OF SKULL BASE APPROACHES TO TREAT CENTRAL NERVOUS SYSTEM TUMORS: PART I: THE PETROSAL APPROACH

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Introduction: The petrosal approach provides excellent access to the petroclival region, the basilar trunk and apex, the anteromedial midbrain and the pons. To access these regions the petrosal approach offers a number of advantages: (1) the surgeon's operative distance to these regions is shorter than in retrosigmoid approaches. (2) There is minimal retraction of the cerebellum and temporal lobe. (3) The neural structures (seventh and eight nerve) are preserved. (4) The otologic structures (cochlea, labyrinth, semicircular canals ) are preserved. (5) Finally, the major venous sinuses (transverse and sigmoid), along with the vein of Labbe and other temporal and basal veins, are preserved. Material and Methods: The petrosal approach was performed in ten cadaveric specimens at the Microsurgical Laboratory (University of Arkansas for Medical Sciences). Two cases operated at the Hospital de Clínicas de Porto Alegre are presented to illustrate this approach. These cases were a huge tentorial and petrosal meningiomas, respectively. Results: the surgical steps patient position, craniotomy flap, cutting the tentorium and closure are described, as well as the microsurgical anatomy. The tumor total resection was achieved in both patients without postoperative deficits. Conclusion: The petrosal approach is intended to gain direct access to the petroclival and perimesencephalic regions while avoiding some of the complications associated with other approaches to this area.