Combined intradural presigmoid transtransversarium transcondylar approach

Surgical exposure of the clivus is difficult because of its proximity to vital neurovascular structures. The anatomic bases of a new surgical approach to this area are discussed. A supra-auricular skin incision is extended toward the posterior border of the sternocleidomastoid muscle. The vertebral artery is exposed from C2 to the occiput unroofing the foramen transversarium of C1. The bone removal consists of a posterior temporal craniotomy, a suboccipital craniectomy, including mastoidectomy with sigmoid sinus unroofing, removal of the lateral margin of the foramen magnum, of the medial third of the occipital condyle, and retrolabyrinthine petrous drilling. Posterior retraction of the vertebral artery facilitates occipital condyle drilling. Intradural exposure of the petroclival region is achieved by L-shaped cutting of the dura with the long branch placed infratentorially anterior to the sigmoid sinus. Intradural exposure of the craniospinal/upper cervical areas is achieved by cutting of the dura medial to the distal sigmoid sinus and by longitudinal cutting of the dura anterior to the vertebral artery. This approach allows multiple ports of entry to the clivus with full control of the vertebrobasilar system, and of the dural sinuses, and is anatomically suited for controlled removal of tumors located in these areas. This approach, or segments of it, has been used successfully in the treatment of large neoplasms of the craniovertebral junction [1)].

1)

Ammirati M, Ma J, Canalis R, Martin N, Black K, Cheatham M, Bloch J, Becker D. A combined intradural presigmoid-transtransversarium-transcondylar approach to the whole clivus and anterior craniospinal region: anatomic study. Skull Base Surg. 1993;3(4):193-200. PubMed PMID: 17170911; PubMed Central PMCID: PMC1656446.