Supracondylar approach

The supracondylar approach provides access to the region of, and medial to, the hypoglossal canal and jugular tubercle.

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Circumscribed lesions of the hypoglossal canal and of the jugular tubercle still remain a surgical challenge. So far, transpetrosal, transcondylar suboccipital, and extreme lateral approaches have been used to access this region. These surgical procedures bear a high risk for neurological deficits. Therefore, Gilsbach et al introduced a new minimally invasive extradural approach to the hypoglossal canal that also allows access to the lateral aspects of the jugular tubercle.

After a paramedian retromastoid skin incision, a basal suboccipital craniectomy lateral to the foramen magnum toward the jugular tubercle is performed. With this approach the occipital condyle and the lateral osseous circumference of the foramen magnum are preserved. Drilling extradurally, the dorsal parts of the jugular tubercle are removed. The exposure is extended downward to the posterior margins of the hypoglossal canal and laterally to the jugular bulb, enabling a minimally invasive exposure of the hypoglossal canal, the lateral aspects of the jugular tubercle, and medial aspects of the jugular bulb.

Using this supracondylar approach, surgical interventions were performed in three patients suffering from a hypoglossal neurinoma, a cholesterol granuloma extending into the jugular tubercle, and a cyst of the hypoglossal canal, respectively. No additional postoperative neurological deficits were seen.

The supracondylar approach seems to be useful to gain access to benign lesions of the hypoglossal canal and of the jugular tubercle to decompress tumors or cysts. In contrast to previously reported techniques this approach has a low risk of morbidity. The surgical field, however, is restricted laterally by the jugular bulb, medially and basally by the residual occipital condyle and dorsally by the dura. Therefore, this approach is useful to remove small lesions or to perform extended biopsies. Radical removal of large tumors seems to be problematic using this approach ¹.

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Gilsbach JM, Sure U, Mann W. The supracondylar approach to the jugular tubercle and hypoglossal canal. Surg Neurol. 1998 Dec;50(6):563-70. PubMed PMID: 9870817.

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