Jugular foramen tumors often extend intra- and extracranially. The gross-total removal of tumors located both intracranially and intraforaminally is technically challenging and often requires a combined skull base approach. This study presents a suprajugular extension of the retrosigmoid approach directed through the osseous roof of the jugular foramen that allows the removal of tumors located in the cerebellopontine angle with extension into the upper part of the foramen, with a demonstration of an illustrative case.

Methods: The cerebellopontine angles and jugular foramina were examined in dry skulls and cadaveric heads to clarify the microsurgical anatomy around the jugular foramen and to define the steps of the suprajugular exposure.

Results: The area drilled in the suprajugular approach is inferior to the acoustic meatus, medial to the endolymphatic depression and surrounding the superior half of the glossopharyngeal dural fold. Opening this area exposed the upper part of the jugular foramen and extended the exposure along the glossopharyngeal nerve below the roof of the jugular foramen. In the illustrative case, a schwannoma originating from the glossopharyngeal nerve in the cerebellopontine angle and extending below the roof of the jugular foramen and above the jugular bulb was totally removed without any postoperative complications.

Conclusions: The suprajugular extension of the retrosigmoid approach will permit removal of tumors located predominantly in the cerebellopontine angle but also extending into the upper part of the jugular foramen without any additional skull base approaches [1)].

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Matsushima K, Kohno M, Komune N, Miki K, Matsushima T, Rhoton AL Jr. Suprajugular extension of the retrosigmoid approach: microsurgical anatomy. J Neurosurg. 2014 Aug;121(2):397-407. doi: 10.3171/2014.3.JNS132419. Epub 2014 May 2. PMID: 24785321.