



Introduction

Jugular foramen is difficult to understand and to access surgically, and to be safe as well as total removal of jugular foramen tumors is also a big challenge. Firstly considering in operation is protection of internal carotid artery, facial nerve and lower cranial nerves. Precisely positioning tumor and selecting appropriate approach are extremely important in total resection of jugular foramen tumors.

Methods

Our study retrospectively analyses 48 cases of jugular foramen tumor. We respectively used retrosigmoid approach, suboccipital transcervico-jugular process approach or combined infratemporal fossa approach, and far lateral paracondylar infralabyrinthine approach, according to the tumor characteristics and infiltrating extent.

Results

The far lateral paracondylar infralabyrinthine approach reveal the structures around jugular foramen along the sigmoid sinus and internal jugular vein: through the suboccipital craniotomy revealing cerebellopontine angle; through resection jugular process and surrounding bone revealing the jugular foramen and improving the exposure of jugular foramen insider and foramen magnum; through Henry gap, as well the natural gap between atlas and ramus of mandible to expose the parapharyngeal space. Total resection was achieved in 42 cases (87.5%), subtotal resection in 3 cases(6.25%), partial resection in 3 cases(6.25%). Facial nerve preservation rate was 94.1%, new cranial nerve injury rate was 17.9%, with no dead cases. The most common postoperative complication was lower cranial nerves dysfunction, including temporary dysarthria and hoarseness respectively in 3 cases(17.6%).

Conclusions

1) Surgical treatment of jugular foramen tumors is a big challenge, however, it will achieve an ideal result, if familiar with the clinical and growth characteristics of different tumors, selecting appropriate surgical approach, and also resecting the tumor along the interface between tumor and surrounding normal tissues. 2) Far lateral paracondylar infralabyrinthine approach without revealing the vertebral artery and shifting facial nerve, is a relative minimally invasive surgical approach to achieve one-stage resection of jugular foramen tumors.

Learning Objectives

1) discuss the approach for total resection of the complex jugular foramen tumors.2) demonstrate the feasibility of the far lateral paracondylar infralabyrinthine approach.

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