GLOMUS JUGULARE TUMORS. A SERIES OF 24 CASES

Pedro Escada, MD, PhD1, Gonçalo Neto de Almeida, MD2, José Pratas Vital, MD, PhD2, Gabriel Branco, MD3

Departments of Otolaryngology1, Neurosurgery2 and Neuroradiology3, Hospital de Egas Moniz, Lisboa, Portugal

INTRODUCTION

Glomus jugulare tumors are neuroendocrine tumors, originating in the paraganglionic cells, which are elements of the neural crest. They are histologically benign, but behave aggressively, eroding the jugular bursa and invading the temporal bone, the skull base, the neck, and, less often, the cranial cavity.

First considered inoperable, the surgical treatment of these lesions was primarily achieved by the Swiss oto-rhino-laryngologist Ugo Fisch, who designed the novel technique named Infratemporal Fossa Approach (BIF).

Currently there is consensus that these tumors should be treated by multidisciplinary teams that include otolaryngologists, neurosurgeons and interventional radiologists. These teams should combine their expertise to perform advanced surgical techniques designed to explore the ear and the temporal bone, the skull base, the nasopharynx and the naso-lacrimal duct, preserving the cranial nerves and the intracranial vessels...

The purpose of this paper is to describe the surgical experience of the Departments of Otolaryngology and Neurosurgery, Hospital de Egas Moniz, in the surgical treatment of jugulare glomus tumors, between 1988 and 2007.

METHODS AND MATERIALS

STUDY DESIGN

Retrospective study based on medical record review and in a recent reevaluation of the patients.

PARTICIPANTS

The study included all the 24 patients who underwent surgical treatment for jugulare glomus tumors at the Hospital de Egas Moniz, in a 20-year period 1988 to 2007.

A total of 24 patients aged between 28 and 74 were enrolled, 17 (71%) females and 7 (29%) males.

Patients with glomus tumors limited to the middle ear without symptoms and signs of intracranial spread were included, whereas patients with intracranial tumors were treated by classical tympanosclerosis or mastoidectomy.

Recent observation of 8 of the patients completed the data of the medical records.

PARAMETERS EVALUATED

Study variables are shown in Table 1

RESULTS

The most common manifestations of the disease were hearing loss, pulsatile tinnitus and deficits in cranial nerves V, VII, IX, X. A list of the symptoms and signs is presented in Table 2.

Table 2: Cranial manifestations

<table>
<thead>
<tr>
<th>Symptom or sign</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hearing loss</td>
<td>83%</td>
</tr>
<tr>
<td>Paralysis cranial nerve IX</td>
<td>33%</td>
</tr>
<tr>
<td>Facial nerve paralysis</td>
<td>25%</td>
</tr>
<tr>
<td>Pulsatile tinnitus</td>
<td>21%</td>
</tr>
<tr>
<td>Paralysis cranial nerve IX</td>
<td>21%</td>
</tr>
<tr>
<td>Paralysis cranial nerve IX</td>
<td>21%</td>
</tr>
<tr>
<td>Facial nerve paralysis</td>
<td>21%</td>
</tr>
<tr>
<td>Vascular lesion of the external auditory canal</td>
<td>21%</td>
</tr>
<tr>
<td>Otoscope</td>
<td>63%</td>
</tr>
<tr>
<td>Paralysis cranial nerve IX</td>
<td>8%</td>
</tr>
<tr>
<td>Otoscope</td>
<td>1%</td>
</tr>
</tbody>
</table>

Preoperative embolization was performed in 22 (92%) of the patients. Vascular supply was seen to come from the ascending pharyngeal, a cervical or ascending pharyngeal arteries.

The surgical technique was the infratemporal fossa approach type A, as described by Ugo Fisch, in all the cases.

SURGICAL TECHNIQUE

Surgical resection was complete in 11 patients (46%) and incomplete in 13 patients (54%). Hearing loss was promptly repaired by the Bradford technique, in cases of the internal carotid artery, considered irreparable.

The patients operated on were 100% cured 5 years after operation, without recurrences of the disease.

The patients had a facial paralysis in the immediate postoperative period, but the number of patients who maintained a significant facial paralysis (House-Brackmann grade V or worse beyond 6 months to 1 year) was reduced to 5 (21%). Other causes of morbidity were dislocation, aspiration pneumonia, and CSF rhinorrhoea, which occurred in 3 patients (12%).

Of the 24 patients, 5 (21%) underwent a second surgery due to recurrence. Only one patient required radiotherapy after incomplete removal of the tumor.

CONCLUSION

When surgical centers have the responsibility to treat patients with uncommon and complex cases, they should periodically reassess, analyze and publish their results.

The results of the first 20 years of the surgical treatment of glomus jugulare tumors in our institution can already provide experience to serve for better results in the future.

REFERENCES


