INTRODUCTION

"To decompress or not to decompress, that is the question." Indications and timing of facial nerve decompression for facial paralysis and the anatomical extent of decompression have been a subject of controversy for years(1). There is still a debate about the need for surgical correction of the functional disabilities and cosmetic disfigurement resulting from permanent facial nerve paralysis(2). For patients treated for Meckel-Rosenthal syndrome (MRS), there is anecdotal evidence in the literature to suggest that surgical decompression of the facial nerve in its entire intratemporal course may prevent further attacks of facial paralysis and its sequelae(3). In case of temporal bone trauma, the rule is "the earlier the decompression is carried out, the better the results." However, there are reports on late decompression with a mean operation period of 70.1±54.8 days after the trauma with acceptable outcomes(4).

OBJECTIVE

The aim of this study is to provide evidence to give justification of surgical decompression of facial nerve even a long time after the onset of facial paralysis.

MATERIALS AND METHODS

Retrospective review of clinical and surgical records of subjects affected by long-term facial paralysis from diverse causes, from July 2006 to April 2013, carried out in a Third Level Center. Surgery was performed under general anesthesia, all patients underwent facial nerve decompression by the transmastoid approach, with facial nerve stimulation on the tympanic and mastoid portions in order to assess postoperative prognosis. A response equal to, or greater than, 0.1 milliamper (mA) was considered qualitatively positive for good prognostic outcome.

Main outcome measurement: Postoperative House-Brackmann (HB) score(5).

RESULTS

Results: A total of 27 patients were operated on between July 2006 and April 2013, 9 males and 18 females with a mean age of 39.8±10.4 standard deviation (SD). The main etiologies were: idiopathic=11, iatrogenic=6, otitis media sequela=1, trauma (temporal bone fracture)=7, and viral=3. The general characteristics of the study group are shown in TABLE 1.

Of the original group, data were available for 15 patients, the other 12 remaining did not give consent to report their follow up data. Of the 15 patients, 2 (13%) patients have not obtained any improvement in their facial function postoperatively, and 3 months after surgery they are still HB grade III; 13 (87%) patients have obtained at least 1 point of improvement in their postoperative HB grade of facial function. FIGURE 1 shows post-operative outcomes up to 24 months.

Table 1. General characteristics of the study group.

<table>
<thead>
<tr>
<th>Aspects</th>
<th>No.</th>
</tr>
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<tbody>
<tr>
<td>Mean Age years ± SD(1)</td>
<td>39.8 ± 10.4</td>
</tr>
<tr>
<td>Minimum</td>
<td>14</td>
</tr>
<tr>
<td>Maximum</td>
<td>61</td>
</tr>
<tr>
<td>Distribution by Sex Male</td>
<td>9</td>
</tr>
<tr>
<td>Female</td>
<td>18</td>
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<tr>
<td>Time of onset (months) Median</td>
<td>2.0</td>
</tr>
<tr>
<td>Maximum</td>
<td>60</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.1</td>
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<tr>
<td>Time to Surgery (months) Median</td>
<td>4.8</td>
</tr>
<tr>
<td>Maximum</td>
<td>61.1</td>
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</tbody>
</table>

* SD = Standard Deviation

Figure 1. Post-operative evolution of facial function in the study group.

DISCUSSION

Facial nerve paralysis is a very stressful situation for a person who is affected by this condition, whatever the cause. It is an aesthetic problem associated with a functional problem and the loss of facial expression, which affects non-verbal communication. All of this creates a physical and a psychosocial handicap.

There is still a debate concerning the treatment of facial paralysis. However, there is agreement regarding the fact that the sooner the treatment, the better the prognosis of facial nerve function, provided the facial nerve is intact. Idiopathic facial paralysis (Bell's palsy) is, has been, and will be a topic of controversy and discussion. Leaving aside the numerous theoretical causes, important anatomical, electrophysiological, radiological, clinical and pathologic evidence supports entrapment at the medial foramen of the fallopian canal as a final common pathway resulting in facial nerve ischemia and degeneration. Surgical decompression may benefit those patients affected by Bell's palsy as well as those with Meckel-Rosenthal syndrome(1,3). It appears that this surgical management safely and effectively prevents recurrent unilateral or bilateral facial paralysis, associated or not with the Meckel-Rosenthal syndrome(6).

Pulec(7) stated that idiopathic facial paralysis should be surgically treated independently of the severity of the lesion, but other physicians oppose surgical intervention in this kind of facial paralysis.

Temporal bone trauma is the second cause of facial paralysis in our study group. Decompression is indicated if 90-95% loss of function is seen very early on EMG or if there is late axonal degeneration on EMG with no sign of recovery(2). Nerve decompression relieves the entrapment of the facial nerve(9), and this relief has been obtained in most of our temporal bone trauma patients(10,11).

The remaining etiologies also showed some degree of facial function improvement over the 24-month period. In the present group of patients, intraoperative stimulation was used as a qualitative means to determine prognosis. In our practice, intraoperative stimulation is performed first on the epineurium, and then the perineurium and endoneurium are opened and stimulation is performed directly on the nerve fibers. We have observed that 0.1 milliams (mA) is the minimum level of stimulation that produces a clear response. If there is response to this stimulus, the prognosis is considered to be good; if there is no response, the prognosis is not good. However, there was one case that showed no response to peroperative stimulation but went on to improve facial function during the post-operative period. Although peroperative response to peroperative stimulation was considered good prognosis, this observation is not conclusive.

The experience with this group of patients has shown that surgical decompression of the facial nerve, even long after the onset of facial nerve paralysis, is useful for patients who seek relief in their condition. Delayed facial nerve surgical decompression is still a matter of debate.

CONCLUSION

Late surgical decompression of the facial nerve is the recommended alternative to relief and/or to improve facial function in patients with facial nerve paralysis.

REFERENCES