ELSEVIER

Auris Nasus Larynx 37 (2010) 546–552

AURIS NASUS LARYNX
INTERNATIONAL JOURNAL OF ORL & HNS

www.elsevier.com/locate/anl

Quality of life of patients following stages III–IV vestibular schwannoma surgery using the retrosigmoid and translabyrinthine approaches

Charbel Rameh *, Jacques Magnan

Department of Otolaryngology – Head and Neck Surgery, Nord University Hospital, Marseille, France

Received 29 August 2009; accepted 18 January 2010
Available online 24 February 2010

Abstract

Objective: Surgery is an unquestionable treatment for stages III and IV vestibular schwannomas. The postoperative quality of life (QOL) remains the main issue of concern. In this study, we have evaluated the postoperative QOL of these patients operated by two surgical approaches, the retrosigmoid approach (RSA) and the translabyrinthine approach (TLA).

Materials and methods: This is a retrospective review of 101 stages III and IV vestibular schwannoma cases operated between 2000 and 2006 at our center by the senior author (J.M.). The Short Form SF-36 questionnaire and additional questions were sent to the patients. Comparison was made between the patient group and a control group to evaluate the postoperative QOL.

Results: The response rate was 67.3%. There were 44 males and 57 females. The average follow up was 5.9 years. 59 patients were operated using the TLA and 42 using the RSA.

Both patient groups had significantly lower scores on the questionnaire when compared to the normal population, and thus a less satisfactory QOL. Pain was the symptom that correlated most with poorer scores on the SF-36 questionnaire, although it was the least frequent symptom reported by the patients. Unsteadiness and facial weakness were the least bothersome complaints. Facial weakness did not correlate with a poorer QOL.

Conclusion: Operated stages III–IV vestibular schwannoma patients suffer from a certain degree of QOL deterioration compared to normal controls. Hearing deficit was the most prevalent symptom. Pain was the least frequent but the most bothersome and with the highest correlation with a poorer QOL. Interestingly, unsteadiness and facial weakness were the least bothersome complaints. Facial weakness did not correlate with a poorer QOL.

Keywords: Vestibular schwannoma; Quality of life; SF-36 questionnaire; Unsteadiness; Pain; Hearing loss; Headache; Tinnitus; Retrosigmoid; Translabyrinthine

1. Introduction

With the advances in diagnostic modalities and, in particular, in magnetic resonance imaging (MRI), vestibular schwannomas are detected more often in the earlier stages. However, many still present at a more advanced stage. In this manuscript, stage III refers to tumors 2–3 cm in diameter which contact the brainstem and/or cerebellum, and stage IV includes tumors larger than 3 cm with compression on the brainstem and/or cerebellum. Resection of these large cerebellopontine angle lesions can be achieved via either the minimally invasive retrosigmoid approach (RSA) or the translabyrinthine approach (TLA), the latter being used mainly for patients with larger tumors and with no serviceable hearing. A minimally invasive retrosigmoid approach entails a limited postauricular incision of 5 cm, a key-hole 1.5–2 cm craniotomy, and use of the operating microscope with the endoscope to get a panoramic view of the cerebellopontine angle without the need for extensive dissection, maintaining safety of the procedure and completeness of tumor excision.

* Corresponding author at: Department of Otolaryngology – Head and Neck Surgery, Nord University Hospital, Bouches du Rhone, Chemin des Bourrely, Marseille, cedex 13015, France. Tel.: +33 4 91 96 86 75; fax: +33 4 91 96 81 98.
E-mail address: charbelrameh@hotmail.com (C. Rameh).

0385-8146/$ – see front matter © 2010 Elsevier Ireland Ltd. All rights reserved.
doi:10.1016/j.anl.2010.01.004

Vestibular schwannoma patients usually present with minimal symptoms, most often asymmetrical hearing loss and tinnitus, without any major compression-related central neurological manifestations. It is therefore very important in this surgery to preserve such a good quality of life (QOL), and in particular facial nerve function, while achieving complete tumor removal. In this paper, we review our operated stages III and IV vestibular schwannomas, focusing on the QOL as seen through the eyes of our patients. A comparison with a control group regarding the postoperative QOL and other specific symptoms is included.

2. Materials and methods

We performed a retrospective review of 150 consecutive cases of stages III and IV vestibular schwannomas operated by the senior author (JM) at our center between 2000 and 2006. Our objective was to study the quality of life of these patients through a validated questionnaire, the Short Form SF-36 questionnaire.

2.1. The questionnaire

The Short Form SF-36 survey is a validated questionnaire used to assess the quality of life of patients following surgical or medical therapies. The questions cover several categories that pertain to different aspects of the QOL. These categories are:

1. SF-1: Physical functioning, representing how diseases might impact normal daily physical activities
2. SF-2: Role-physical limitations, representing limitations in working and daily activities due to physical health
3. SF-3: Limitations due to physical pain
4. SF-4: General health assessment by the patients
5. SF-5: Vitality and energy
6. SF-6: Social activity limitations secondary to emotional and physical problems
7. SF-7: Role-emotional problems, representing limitations in working and daily activities due to emotional stress
8. SF-8: Mental health

A higher score (up to 100) on each category represents a better patient functioning [1].

In addition to the classical SF-36 questionnaire, we added some items specific for schwannoma surgery, inquiring about headache, hearing loss, facial weakness, dry eyes, tinnitus, unsteadiness, and pain. Within each question, patients were asked to rate the influence of the complaint on their daily lives.

Finally, the patients were asked about their general satisfaction with the surgery, and what information they thought was lacking preoperatively. An open ended question inquiring about the aspects of daily life that were changed by the operation allowed patients to express any other concerns not addressed in the objective questions.

2.2. Methods

The questionnaires were sent to all 150 patients and to an equal number of age- and gender-matched controls. Comparison was made between the patient group and the controls with respect to their scores on the different sub-categories of the SF-36 questionnaire. Statistical analysis was done to look for any correlations between the patients' complaints and their assessment of their QOL.

2.3. Statistical analysis

Data was assessed as mean value $\pm$ standard deviation. The SF-36 questionnaires were analyzed in accordance with the SF-36 manual. Measures of heath-related quality of life for study subjects were compared with values for the age- and gender-matched control population with use of paired Student's *t*-test. Categorical variables were compared with chi-square tests. Statistical analysis was done with the SPSS 15.0 statistical software package (SPSS Inc., Chicago, IL). The Student's *t*-test was used for comparison of statistical significance. A probability value less than 0.05 was considered as statistically significant.

3. Results

3.1. Patient population

101 out of 150 patients completely filled the questionnaire, with a response rate of 67.3%. This constituted our study population, including 44 males (43.60%) and 57 females (56.40%). The average patient age was 55.19 years $\pm$ 11.37 years, with a range of 21–90 years. The average follow up was 5.9 $\pm$ 2.04 years, with a range of 2–9 years.

59 patients (58.4%) were operated using the translabyrinthine approach (TLA) and 42 (41.6%) using the retrosigmoid approach (RSA). There were 42 right side (41.6%) and 59 left side operations (58.4%). Table 1 summarizes the tumor stage distribution in the two groups.

Table 1
Patient distribution with respect to tumor stage.

	Stage III (2–3 cm in CPA)	Stage IV (more than 3 cm with distortion of aqueduct of 4th ventricle)
TLA	26	33
RSA	36	6

TLA: translabyrinthine approach and RSA: retrosigmoid approach.