

Vestibular Schwannoma Quality of Life

Two disease-specific [Vestibular schwannoma quality of life instruments](#) have been developed for sporadic [vestibular schwannoma](#): the [Penn Acoustic Neuroma Quality of Life Scale](#) in 2010, and the [Mayo Clinic Vestibular Schwannoma Quality of Life Index](#) in 2022.

Being diagnosed with a vestibular schwannoma creates [anxiety](#) and leads to a temporary reduction in [quality of life](#) (QoL). However, once a treatment modality is chosen, [observational](#) management for amenable tumors produces the highest QoL.

Patients undergoing SRS or observation report a better total [Penn Acoustic Neuroma Quality of Life scale](#) (PANQOL) and higher PANQOL facial, balance, and pain subdomain scores than those undergoing microsurgical resection. However, the differences in health-related QOL outcomes following SRS, observation, and microsurgical resection are small ¹⁾.

Long-term QoL in patients with VS < 3 cm in diameter was higher in those having gross total resection (GTR) than those with less than GTR despite having similar rates of facial nerve and hearing preservation. This may be due to psychological factors. Notwithstanding, functional preservation should be prioritized.

A nationwide online survey was distributed to 24 community organizations. The inclusion criteria were a diagnosis of AN irrespective of the treatment approach. There were 52 respondents. Mental well-being was assessed using the Hospital Anxiety and Depression Scale (HADS), and quality of life was assessed using the Penn Acoustic Neuroma QOL scale (PANQOL).

Results: The most frequently reported symptoms reported were poor balance, tinnitus, hearing loss, and headache. Preliminary analyses suggested that headaches, tinnitus, and mental well-being were significantly correlated with QOL. Hierarchical regression revealed that these two symptoms and mental well-being accounted for 18.7% and 51.1% of the variance in QOL, respectively. In addition, there was a significant difference in depression scores between management types, with the surgery group having a significantly higher depression score than the radiation group.

Symptoms and mood contribute to QOL for those diagnosed with AN. This can be understood through the common-sense model and fear of cancer recurrence. Screening for psychological difficulties should be provided from the point of diagnosis to post-treatment to allow for targeted management plans to mitigate the effects of these on QOL ²⁾.

The study provides valuable insights into the QOL and psychological well-being of AN patients, shedding light on the significance of symptoms and mood in affecting overall QOL. The study's findings underscore the need for comprehensive support and psychological screening throughout the AN patient journey, extending from diagnosis to post-treatment care. While the study's limited sample size and reliance on self-report measures may pose some limitations, its contribution to the field is notable.

Data on sex-specific, pre- and post-surgically quality of life (QoL) are rare. The objective of the present study was to determine sex-specific aspects of QoL in VS. Health-related QoL was analyzed in 260 patients (112 male/148 female) with unilateral sporadic VS using general (SF-36: general Short-Form Health Survey), disease-specific (PANQOL: Penn Acoustic Neuroma Quality-of-Life Scale, PANQOL) and symptom-specific (DHI: Dizziness Handicap Inventory; HHI: Hearing Handicap Inventory; THI: Tinnitus Handicap Inventory; FDI: Facial Disability Index) QoL questionnaires. Sex differences were evaluated pre- and postoperative by multi- and univariate analyses based on 200 preoperative and 88 postoperative questionnaires. Female patients were significantly more affected by dizziness, headaches, reduced energy, and anxiety. Energy and balance changed similarly in both sexes after surgery. However, postoperative women tended to be more affected by facial palsy and headaches than men. Despite the greater physical impairment, general health improved equivalently or even more in female patients than in males. In conclusion, self-rated QoL in VS is significantly affected by sex and surgery. This should be taken into account when counseling VS patients regarding observation, radiotherapy, and surgery ³⁾.

This study offers valuable insights into the sex-specific aspects of QoL in vestibular schwannoma patients, particularly in the context of surgical treatment. It underscores the importance of considering sex as a factor when advising patients on their treatment options. However, it's essential to recognize the potential limitations of the study, such as the choice of questionnaires and sample size, when interpreting the findings.

While the mainstay of treatment for these benign tumors remains microsurgical resection, there is limited research exploring how certain modifiable risk factors (MRFs) may affect the perioperative course. The purpose of this study was to investigate how MRFs including malnutrition, obesity, dyslipidemia, uncontrolled hypertension, and smoking may affect postoperative rates of readmission and nonroutine discharges. We utilized the 2016 and 2017 Healthcare Cost and Utilization Project Nationwide Readmissions Database. MRFs were queried using appropriate International Classification of Diseases, Tenth Revision (ICD-10) coding for categories including malnutrition, obesity, dyslipidemia, smoking, alcohol, and hypertension. The statistical analysis was done using RStudio (Version 1.3.959). Chi-squared tests were done to evaluate differences between categorical variables. The Mann-Whitney U-testing was utilized to evaluate for statistically significant differences in continuous data. The “Epitools” package was used to develop logistic regression models for postoperative complications and post hoc receiver operating characteristic curves were developed. Pertaining to nonroutine discharge, predictive models using malnutrition outperformed all other MRFs as well as those with no MRFs ($P < .05$). In the case of readmission, models using malnutrition outperformed those of obesity and smoking ($P < .05$). Again, an increase in predictive power is seen in models using dyslipidemia when compared to obesity, smoking, or uncontrolled hypertension. Lastly, models using no MRFs outperformed those of obesity, smoking, and uncontrolled hypertension ($P < .05$). This is the first study of its kind to evaluate the role of MRFs in those undergoing surgical resection of their acoustic neuroma. We concluded that certain MRFs may play a role in complicating a patient's perioperative surgical course ⁴⁾.

The study is a valuable addition to the literature, shedding light on the role of MRFs in the context of acoustic neuroma surgery. While the study has its strengths, including a clear methodology and

robust statistical analysis, it would benefit from a more comprehensive exploration of patient characteristics and potential confounders. Nonetheless, the findings offer a foundation for further research and clinical considerations regarding MRFs in acoustic neuroma surgery.

Long-term quality of life in patients with vestibular schwannoma

2015

There was a total sample population of 376 patients diagnosed with a unilateral VS. INTERVENTION: A total of 223 patients with unilateral VS returned the mailed questionnaires. These were then divided into two groups-78 that had undergone microsurgical excision and 145 that were managed conservatively. Subgroups within these primary groups were created for analysis. MAIN OUTCOME MEASURE: The primary outcome measure was the Medical Outcomes Study 36 Items Short Form (SF-36). The Dizziness Handicap Inventory test, Hearing Handicap Inventory test, and Tinnitus Handicap Inventory were also used. RESULTS: The surgically managed group had a worse QOL when compared with the conservatively managed group using SF-36, significantly so in the domains of physical role limitation and social functioning. Trends were seen toward a better QOL in some domains in the subgroups of male patients and patients younger than 65 years. Worse QOL scores in the Tinnitus Handicap Inventory were seen in the subgroups with larger tumor size. Finally, on correlation analysis between all handicap inventories and SF-36, handicap due to disequilibrium had the strongest correlation with worsening of QOL. In SF-36, the vitality domain showed the greatest correlation with otologic handicap overall, whereas the role emotional domain showed the least. CONCLUSION: This study found that worse QOL scores for surgically managed versus conservatively managed VS patients are most significant in the areas of physical role limitation and social functioning. In some areas, patients who are male and younger report better QOL. Handicap due to disequilibrium seems to have the greatest negative impact on QOL. These factors should be considered when counseling patients regarding approach to VS, in the context of an experienced management program ⁵⁾.

Very few publications have investigated [health related quality of life](#) (HRQOL) differences between individual treatment groups, and none have used a disease-specific HRQOL instrument.

All patients with sporadic small- to medium-sized [vestibular schwannomas](#) (VSs) who underwent primary [vestibular schwannoma surgery](#), stereotactic radiosurgery (SRS), or observation between 1998 and 2008 were identified. Subjects were surveyed via postal questionnaire using the 36-Item Short Form Health Survey (SF-36), the 10-item Patient-Reported Outcomes Measurement Information System short form (PROMIS-10), the Glasgow Benefit Inventory (GBI), and the Penn Acoustic Neuroma Quality-of-Life (PANQOL) scale. Additionally, a pool of general population adults was surveyed, providing a nontumor control group for comparison.

A total of 642 respondents were analyzed. The overall response rate for patients with VS was 79%, and the mean time interval between treatment and survey was 7.7 years. Using multivariate regression, there were no statistically significant differences between management groups with respect to the PROMIS-10 physical or mental health dimensions, the SF-36 Physical or Mental Component Summary scores, or the PANQOL general, anxiety, hearing, or energy subdomains. Patients who underwent SRS or observation reported a better total PANQOL score and higher PANQOL facial, balance, and pain subdomain scores than the microsurgical cohort ($p < 0.02$). The differences

in scores between the nontumor control group and patients with VS were greater than differences observed between individual treatment groups for the majority of measures.

The differences in HRQOL outcomes following SRS, observation, and microsurgery for VS are small. Notably, the diagnosis of VS rather than treatment strategy most significantly impacts quality of life. Understanding that a large number of VSs do not grow following discovery, and that intervention does not confer a long-term HRQOL advantage, small- and medium-sized VS should be initially observed, while intervention should be reserved for patients with unequivocal tumor growth or intractable symptoms that are amenable to treatment. Future studies assessing HRQOL in VS patients should prioritize use of validated disease-specific measures, such as the PANQOL, given the significant limitations of generic instruments in distinguishing between treatment groups and tumor versus non tumor subjects ⁶⁾

2014

Ongoing [dizziness](#) and [headache](#) are the strongest predictors of long-term [quality of life](#) reduction in patients with sporadic [vestibular schwannoma](#) (VS), while the impact of [hearing loss](#), facial nerve function, and tinnitus are less by comparison. This information may be valuable for patient counseling, refinement of VS quality-of-life assessment instruments, and determining high-yield targets for therapy in efforts to further improve patient outcomes ⁷⁾.

Patients harboring large or giant VSs score lower on all the QOL domains compared with the normative population. More than 60% showed a clinically significant improvement in HR-QOL 1 year after surgery, a result that was sustained at subsequent follow-up ⁸⁾.

[Vertigo](#) and postoperative hearing status could be identified as the parameters with the strongest influence on QOL ⁹⁾.

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