Supracricoid Partial Laryngectomy: literature review on quality of life protocols

Laringectomias supracricóides: revisão de literatura em protocolos de qualidade de vida

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ABSTRACT

Supracricoid Partial Laryngectomy (SCPL) is indicated for treatment of tumors staging 1 and 2, and some cases of advanced tumors. It is considered by literature as presenting satisfactory results for both, preservation of larynx and its functionality. This study aimed a systematic review of literature on voice related quality of life in patients submitted to SCPL, identifying protocols of quality of life regarding head and neck cancer. The following database was consulted for the systematic exploratory literature review: MEDLINE, SCIELO, LILACS; PUBMED. Portuguese, English and Spanish-language descriptors (DeCS) were used. The selection of articles followed inclusion criteria for Relevance Test appliance. This literature review revealed that the protocols used specifically with oncologic patients of head and neck, were mainly EORTC-C30/H&N35, UW-QOL and HNQOL. The SCPL even though to be considered a surgery that allows the preservation of swallowing and phonation functions is pointed as having the possibility of remaining complaints in such functions. Literature affirms that patients were satisfied with their own voice, having little difficulty in order to communicating in a intelligible way. Studies report patients with breathing difficulties after SCPL, including obstructive sleep apnea. It was concluded further researches aiming at pointing the difficulties resultant from SCPL and using more specific head and neck protocols are necessary, which may better reveal the impact of SCPL on quality of life.

Keywords: Voice; Dysphonia; Head and Neck Neoplasms; Laryngectomy; Quality of Life

RESUMO

A Laringectomia Parcial Supracricóide (LPSC) é indicada para tratamento de tumores com estadiamento 1 e 2 e certos casos de tumores avançados. É considerada pela literatura como apresentando resultados satisfatórios em ambas situações, preservação da laringe e funcionalidade. Este estudo tem como objetivo rever de forma sistemática a literatura voltada para qualidade de vida em voz de pacientes submetidos a LPSC, identificando-se os protocolos de qualidade de vida em câncer de cabeça e peito. Para a revisão de literatura sistemática exploratória foram considerados os seguintes bancos de dados: MEDLINE, SciELO, LILACS; PubMed. Utilizados descritores em português, inglês e espanhol. A seleção dos artigos seguiu critérios de inclusão, para aplicação de teste de Relevância. Esta revisão de literatura revelou que os protocolos específicos para pacientes oncológicos de cabeça e peito mais utilizados são o EORTC-C30/H&N35, UW-QOL e HNQOL. A LPSC embora seja considerada uma cirurgia que vise à preservação das funções de deglutição e fonação é apontada como tendo possibilidade de permanência de queixas em tais funções. A literatura afirma que os pacientes se declaram satisfeitos com a própria voz, tendo pouca dificuldade para se comunicar de forma inteligível. Estudos relacionam pacientes com dificuldades respiratórias após LPSC, inclusive com apneia obstrutiva do sono. Conclui-se que há necessidade de mais pesquisas que visem pontuar as dificuldades resultantes da LPSC e que utilizem protocolos específicos em cabeça e peito, para melhor mostrar o impacto da LPSC na qualidade de vida.

Descritores: Voz; Disfonia; Neoplasias de Cabeça e Pescoço; Laringectomia; Qualidade de Vida

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ABSTRACT

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INTRODUCTION

The supracricoid partial laryngectomy (SCPL) was idealized aiming at avoiding the total laryngectomy1 and it has been considered as a good alternative for T1 and T2 tumors and some T3 and T4 selected cases, once its results are found to be satisfactory for both, the laryngeal preservation and functions, when compared to total laryngectomy (TL)2-6. Several literature reports show local control, low recurrence rate6,7,10 and survival rates similar to TL1-3, besides allowing the nonuse of permanent tracheostomy, which enables the oral feeding, voice preservation and social functions, providing a better quality of life6,8,11-14. Thus, the SPL justifies itself as an alternative of great value once it allows the maintenance of voice without the use of any device and without training15. However, it is known that in partial laryngectomy there is always a vocal quality prejudice characterized as hoarse, breathy, with a consequent prejudice of speech intelligibility, affecting the quality of life8,16.

In general, it is possible to acknowledge that the quality of life is severely affected in patients submitted to head and neck surgeries. Besides the impact of a cancer diagnosis, there is, as a consequence of the treatment, the prejudice of primordial functions for social living such as appearance, voice and swallowing, which are seriously affected11,17.

Studies show that nearly half of the patients in treatment for head and neck cancer present depressive symptoms during and after the treatment of the disease18. The quality of life is worse in patients submitted to TL when compared to patients submitted to SCPL, who present better scores when assessed through quality of life protocols19.

In the last decades, there has been changes in the assessment of quality of life of patients. Before, the concern was to assess the patient’s survival after the tumor. Nowadays, there is a concern about the quality of life after treatment and the functionality of the affected organ, generating researches on patients’ quality of life20.

Therefore, assessing the quality of life of oncologic patients becomes complex, considering that it involves physical and psychological matters, and that priorities of patients vary according to the individuality, values and beliefs21. It depends on factors involved in each one’s lives, and the quality of life is a “subjective multidimensional and personal construct”22. However, assessing the quality of life of patients with head and neck cancer, more specifically, enables the choice of approaches aiming not only at the survival, but also at the emotional necessities, offering more conditions for the team involved in the treatment to know the most affected parameters, and choose treatments that value the quality of life of such patients20.

The literature review on supracricoid laryngectomies points out that there is a lack of researches aiming at knowing the functional results of SCPL. The revised studies show heterogeneous methods of assessment, use of parameters and scales, not allowing a significant meta-analysis20.

This study aims to review systematically the literature on the analysis of voice-related quality of life in patients submitted to supracricoid laryngectomy, concerning the of types of protocols used, results and evidences of ways of coping with the vocal prejudice.

METHODS

The systematic exploratory literature review was performed using the following database: Medical Literature Analysis and Retrieval System (MEDLINE), Scientific Electronic Library Online (SciELO), Latin-American and Caribean Health Sciences Literature (LILACS) and PUB Med. The descriptors (DeCs) were researched in Portuguese, Spanish and English. In order to complement the location of articles, the research tool ClinicalKey, was used with English descriptors.

The descriptors and combined terms selected in Portuguese were: laringe, voz, disfonia, voz alaringea, laringectomia, qualidade de vida, qualidade de voz, distúrbios de voz and neoplasia de laringe. Respectively, in English: larynx, voice, dysphonia, speech alaryngal, laryngectomy, quality of life, quality of voice, laryngectomy partial, voice disorders, head and neck neoplasms. And, in Spanish: laringe, voz, disfonía, voz alaringea, laringectomía, calidad de vida, calidad de la voz, trastornos de la voz, neoplasias de cabeza y cuello.

The selection of articles was performed by the two authors of this study and, for greater reliance of research results, a relevance test was conducted20, with a previous conception of a form for this purpose (Figure 1).

Thus, three stages were followed: Relevance Test I, applied from the reading of the articles’ titles and abstracts in order to verify whether they were original studies about voice-related quality of life in subjects submitted to partial laryngectomy, published between 2004 and 2015. The articles considered pertinent to
the aim of the study followed to Relevance Test II – phase I, in which all articles were read and confirmed to be related to quality of life in subjects submitted to supracricoid partial laryngectomy. Finally, in phase II, the articles using protocols or questionnaires as assessment tools for quality of life in head and neck cancer applied in subjects submitted to supracricoid laryngectomy were selected. In this stage, articles assessing quality of life in patients with dysphagia were excluded, once they did not attend the inclusion criteria of this study. The last stage was the Relevance Test III, in which only articles using assessment protocols of quality of life in head and neck cancer in patients submitted to supracricoid partial laryngectomy were selected.

Figure 1 presents the relevance tests designed and applied for the selection of articles and Figure 2 presents the flow chart illustrating the collecting and selection phases of the articles analyzed in this study.

<table>
<thead>
<tr>
<th>APPLICATION FORM FOR RELEVENCE TEST I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inclusion criteria</td>
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<tr>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>1. The publication addresses quality of life of subjects submitted to partial laryngectomy?</td>
</tr>
<tr>
<td>2. Is it an original article?</td>
</tr>
<tr>
<td>3. Was the article published between 2004 and 2015?</td>
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<table>
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<tr>
<th>APPLICATION FORM FOR RELEVENCE TEST II</th>
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<tbody>
<tr>
<td>Phase I</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>1. Does the publication mention quality of life in supracricoid partial laryngectomy?</td>
</tr>
<tr>
<td>2. Was the article fully read?</td>
</tr>
<tr>
<td>3. Phase II</td>
</tr>
<tr>
<td>4. Does the publication have a quality of life protocol?</td>
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<tr>
<th>APPLICATION FORM FOR RELEVENCE TEST III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criteria for definite acceptance</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>1. Does the publication have quality of life protocol specific for head and neck cancer?</td>
</tr>
</tbody>
</table>

Figure 1. Application form for relevance tests I, II and III.
Figure 2. Flow chart of the study stages and selection of articles
Procedures for the analysis of articles

The data analysis involved systematization and description of the studies’ characteristics in an exploratory review on the quality of life of patients submitted to supracricoid laryngectomy regarding the tool used, results and conclusion of each study.

The content analysis was performed according to suggested by Garabito et. al. (2009), Bardin (2011), with the construction of synthesis matrix based on Botelho et al., 2011, obeying categories designed in order to acknowledge protocols and assessment ways of quality of life in patients submitted to SCPL.

This study was approved by the Ethics Committee under protocol Nº 394.430.

LITERATURE REVIEW

This study aimed to review the literature in order to verify which specific protocols in head and neck cancer are used in the assessment of quality of life of patients submitted to supracricoid partial laryngectomy (SCPL).

Table 1 presents the identification of protocols used in the studies for the assessment of quality of life, specifying the type of protocol, its aim and the number of articles that used the respective protocols in patients submitted to SCPL.

<table>
<thead>
<tr>
<th>Quality of Life Protocols</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>QVV</td>
<td>2</td>
<td>11,2</td>
</tr>
<tr>
<td>IDV</td>
<td>13</td>
<td>72,3</td>
</tr>
<tr>
<td>HNQOL</td>
<td>1</td>
<td>5,5</td>
</tr>
<tr>
<td>EORTC QLQ C 30 / H&amp;N 35</td>
<td>1</td>
<td>5,5</td>
</tr>
<tr>
<td>UWQOL</td>
<td>1</td>
<td>5,5</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>100</td>
</tr>
</tbody>
</table>

Obs: There are articles that used more than one protocol, justifying the non-coincidence of the numbers mentioned before, which were related to the number of articles that studied quality of life.

QVV = Protocolo de Qualidade de Vida em Voz; IDV = Índice de Desvantagem Vocal; HNQOL = Head and Neck Quality of Life; EORTC QLQ C30 / H&N35 = European Organization for Research and Treatment of Cancer Quality of Life Questionnaire; UWQOL = Washington University Quality of Life Questionnaire.

Figure 3 presents the identification of the articles selected for this study, which assessed the quality of life of patients submitted to SCPL and that used validated questionnaires specific for head and neck cancer, the main interest of this study.

According to the literature, it is possible to assess quality of life by the application of specific questionnaires. Therefore, questionnaires must be translated and validated for results reliability. Nowadays, there are several instruments for the assessment of quality of life, but only a few specific for patients submitted to head and neck surgeries, and the questionnaires that have been used for this purpose are: Head and Neck Quality of Life, from Michigan University, United States (HNQOL), European Organization for Research and Treatment of Cancer (EORTC), Quality of Life Questionnaire from Washington University, United States (UW-QOL) and the Functional Assessment of Cancer Therapy (FACT-H&N). It is noteworthy that great part of the questionnaires for quality of life comprise questions regarding the patient’s general health state. Furthermore, specific protocols for...
head and neck cancer have a greater detailing of the aspects more often affected by the disease, enabling to dimension such impact on patient’s quality of life. It is important to stress that the assessment of quality of life of patients in early stages is different than those in more advanced stages of the disease. That is because a more conservative approach changes significantly the patient’s expectations towards the treatment, diminishing the physical and emotional distress, and consequently improving the quality of life scores.

In this study, it was possible to verify that the most commonly used general protocol to assess voice related quality of life in individuals submitted to SCPL was the VHI. The specific protocols for head and neck cancer were: Head and Neck Quality of Life, from Michigan University (HNQOL), Quality of Life Questionnaire from Washington University (UW-QOL) and European Organization for Research and Treatment of Cancer (EORTC). All protocols have question that assess fundamental domains, such as: social, emotional and physical. The HNQOL is a faster questionnaire to be answered, followed by UW-QQOL and EORTC, respectively.

The validated questionnaires found in the three selected articles are listed with the respective characteristics summaries in Figure 4.

For a better visualization, Figure 5 provides the abstracts of the mentioned articles.

Moyano used the HNQOL questionnaire to assess quality of life in patients treated by supracricoid partial laryngectomy with cricohyoidoepiglottopexy (CHEP). The results indicated a small number of patients with tumor recurrence; estimated survival after 10 years was 95.83%. These indexes, according to the author, are comparable to patients submitted to TL. Communication and overall disturbances caused by treatment were found to be the two quality-of-life domains mainly affected. Nevertheless, patients who had received radiotherapy, those who had not had their tracheal cannula removed or those that had undergone neck dissection were the most affected. The conclusion was that SCPL with CHEP as a surgical technique allows good control of the condition and has a low impact on the patients quality of life.

Sewnaik compared the quality of life of patients submitted to SCPL and TL after radiotherapy. Patients were assessed through EORTC QLQ C-30 and H&N35 questionnaire and the VHI. The author did not find statistical difference between the two groups of patients. There was a discrete difference regarding the smell and taste senses, favoring the SCPL group. Authors believe that the loss of smell and taste have a negative impact on the quality of life, once patients enjoy less their meals, which doesn’t necessarily mean a loss of appetite. The VHI did not show statistical difference between the groups either, since all patients were reasonable satisfied with their voices. Other two aspects also had similar results for the two subscales: physical and emotional. For the author, it was not possible to affirm clearly whether there is a great difference between patients submitted to SCPL and TL due to the lack of quality of life questionnaires specific for larynx, demanding further researches for a better specificity in protocols.

Kandogan compared different laryngectomy surgical techniques, such as laryngofissure cordectomy, fronto-lateral laryngectomy, SCPL, in order to verify which ones presented better functional and vocal quality results. The UW-QOL was applied

<table>
<thead>
<tr>
<th>Article</th>
<th>Authors and year of Publication</th>
<th>Article Title</th>
<th>Protocols used</th>
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<tbody>
<tr>
<td>Article 1</td>
<td>Moyano, JAM; Gutiérrez, RS; Nogueras, JR; Aumente, PO; Villarejo, PL. (2004).</td>
<td>Assessment of quality of life in patients treated by supracricoid partial laryngectomy with cricohyoidoepiglottopexy (CHEP)</td>
<td>(HNQOL) -University of Michigan Head and Neck Cancer - Specific Quality of Life.</td>
</tr>
<tr>
<td>Article 2</td>
<td>Sewnaik, A; Brink, JLVD; Wieringa, MH; Meeuwis, CA; Kerrebijn, JDF. (2004).</td>
<td>Surgery for recurrent laryngeal carcinoma after radiotherapy: Partial laryngectomy or total laryngectomy for a better quality of life?</td>
<td>(EORTC-C30/H&amp;N35) - European Organization for Research and Treatment of Cancer. VHI – Voice Handicap Index</td>
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</table>

**Figure 3.** Articles that used quality of life protocols specific for head and neck cancer in subjects submitted to supracricoid partial laryngectomy.
and it was verified a statistically significant difference between cordectomy and SCPL groups, and between cordectomy and fronto-lateral laryngectomy groups. The SCPL group gave the lowest scores and the cordectomy group gave the highest scores in three survey questions representing the quality of life, performances and new voices. Concerning the social impact, there was no statistical difference between the groups, since all of them evaluated this impact in a similar way. For the author, the removal of one or two arytenoid did not have any significant adverse effects on the quality of life, the functional outcomes, or the quality of voice. In general, all techniques presented in the study showed good results upon the quality of life of patients, with preservation of functional results and voice.

Some authors defend that the decanulation time⁶,¹²,²⁶,³⁶, the concomitance with adjuvant therapies such as radiotherapy⁶,¹⁰,¹¹,³⁷, the patient age⁵,⁶,⁸,⁹,³⁸, and the performance of cervical esvaziation¹¹ are factors that influence on general quality of life, affecting emotional and social aspects¹²,¹⁶. Early decanulated patients are more satisfied with their quality of life than those who remained with the tracheostomy for a long period of time¹¹,¹³,²⁶,³⁸, since besides affecting directly the feeding and increasing the permanence in hospital³⁵, the presence of the tracheal cannula affects significantly the voice, contributing for a difficulty in the speech intelligibility with a consequent prejudice in social communication¹. Thus, patients tend to have a better self-assessment of quality of life when they are without the nasogastric tube, decanulated and with the possibility of social eating⁷,⁸, ²⁶,³⁷.

Pain and the treatment discomfort were mentioned, in general, as factors that influence negatively on the quality of life¹¹. Another aspect quoted by authors is the disease stage, once in early stages treatments are more conservative, increasing the satisfaction level with the treatment method¹²,¹³,²⁷. By applying the Beck Depression Inventory, used to assess patients’ mood after treatment, some authors could conclude that patients with tumors in more advanced stages are more willing to develop depression than patients in early

Figure 4. Characterization synthesis of the quality of life questionnaires for head and neck oncologic patients found in the literature review.
<table>
<thead>
<tr>
<th>Title / Authors / Year of Publication</th>
<th>Aim of the study</th>
<th>Summary of the study</th>
</tr>
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<tbody>
<tr>
<td>Assessment of quality of life in patients treated by supracricoid partial laryngectomy with cricohyoidoepiglottopexy (CHEP) Moyano, JAM; Gutiérrez, RS; Nogueras, JR; Aumente, PO; Villarejo, PL. 2004.</td>
<td>To assess quality of life in patients diagnosed with epidermoid carcinoma of the larynx, after supracricoid partial laryngectomy (SCPL) with cricohyoidoepiglottopexy (CHEP). To examine how quality-of-life may be associated to the treatment received: neck dissection, decannulation and radiotherapy.</td>
<td>A descriptive, observational, cross-sectional study was conducted involving 26 patients out of a group of 51. They were all males with an average age of 61.7 years at the time of the interview. We used the disease-specific quality of life questionnaire devised by the University of Michigan: the Head and Neck Cancer-specific Quality of life instrument (HNCQL). Results: During an average follow-up period of 83.65 months, 2 patients (3.92%) suffered a recurrence. Estimated survival after 3, 5 and 10 years was 95.83%. Communication and overall disturbances caused by treatment were found to be the two quality-of-life domains mainly affected. Generally speaking, patients who had received radiotherapy, those who had not had their tracheal cannula removed or those that had undergone neck dissection were the most affected. Conclusions: SCPL with CHEP as a surgical technique allows good control of the condition and has a low impact on the patient’s quality of life.</td>
</tr>
<tr>
<td>Surgery for recurrent laryngeal carcinoma after radiotherapy: Partial laryngectomy or total laryngectomy for a better quality of life? Sewnaik, A; Brink, JLV; Wieringa, MH; Meeuwis, CA; Kerrebijn, JDF. 2004.</td>
<td>To investigate the quality of life after partial laryngectomy versus total laryngectomy for recurrent laryngeal carcinomas after radiotherapy.</td>
<td>Twenty-three patients (N = 12 partial laryngectomy, N = 11 total laryngectomy) with recurrent laryngeal cancer after radiotherapy were included in the study. Three different questionnaires, 1) EORTC Quality of Life Questionnaire (QLQ)-C30 Dutch version 3.0, 2) EORTC-H &amp; N 35, and 3) the Voice Handicap Index, were sent to all patients. The only major difference in quality of life of patients after partial laryngectomy versus total laryngectomy was found to be smell and taste related. No other differences were found. The VHI did not show significant differences between the groups either. The only great difference between patients submitted to PL and to TL was the smell and taste prejudice with a negative impact on the quality of life. Thus, the study did not find much difference in quality of life after treatment with a partial laryngectomy or a total laryngectomy in patients with recurrent laryngeal cancer after radiotherapy.</td>
</tr>
<tr>
<td>Quality of life, functional outcome, and voice handicap index in partial laryngectomy patients for early glottic cancer. Kondogan, T; Sanal, A. 2005.</td>
<td>To gather information about the quality of life issues, functional outcomes and voice problems facing early glottic cancer patients treated with the surgical techniques such as laryngofissure cordectomy, fronto-lateral laryngectomy, or cricohyoidopexy. In particular, consistency of life and voice quality issues with the laryngeal tissue excised during surgery is examined. In addition, the effects of arytenoidectomy to the life and voice quality are also studied.</td>
<td>29 male patients were enrolled in the study. The average age was 53.9 years. Three out of 10 patients with laryngofissure cordectomy also had arytenoidectomy. 11 patients had fronto-lateral laryngectomy with Tucker reconstruction (two also had arytenoidectomy). Eight patients with cricohyoidopexy and bilateral functional neck dissection. Three of these patients also had arytenoidectomy. In bilateral functional neck dissection cases, spinal accessory nerve was preserved and level V of the neck was not dissected. None of the patients had neither radiotherapy nor voice therapy. There was a statistically significant difference between cordectomy and cricohyoidopexy group in answers to the University of Washington (UW-QOL). Cricohyoidopexy group gave the lowest scores and the cordectomy group gave the highest scores in three survey questions representing the quality of life, performances and new voices. In conclusion, all patients with early glottic cancer, treated with different surgical technics reported fairly good quality of life outcomes, functional results and voice qualities. This study also found that the removal of arytenoid does not have any adverse effects on the quality of life and voice from the patients’ point of view.</td>
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</table>

**Figure 5. Summary of the three studies that used specific quality of life protocols for head and neck cancer**
Concerning the voice, there is a divergence of opinions, since some authors defend that, in general, patients declare satisfaction with their own voice, with little difficulty to speak in public and with an intelligible communication even if the voice is weak and if there is some difficulty to communicate in noisy environments, once it cannot be increased satisfactorily. Some defend that communication was the most affected domain, with lower quality of life. Another explanation may be the fact that patients who have larynx cancer may consider other aspects to assess quality of life of that go beyond the voice, influenced by the satisfaction of the cure and several other factors, such as personality, relationship with the partner, work demands, age, etc. It was recently showed that VHI scores are significantly higher in patients that are retired or adjusted at work.

Vocal problems are frequent in SCPL, such as moderate to severe dysphonia, hoarse and breathy, irregular and tense quality of voice. This factors certainly influence quality of life scores. Studies suggest that vocal rehabilitation should occur as soon as possible so there is an improvement in the vocal pattern, minimizing the consequences that affect quality of life of patients caused by vocal disadvantage. Nevertheless, it is necessary that patients are able to adhere to post-operative care and rehabilitation, considering physical and emotional conditions important factors for a better recovery.

In this research study it was possible to observe that, despite showing concern with the quality of life of patients submitted to SCPL, the number of authors using specific head and neck cancer protocols to assess quality of life of these patients is still small, and that there is a lack of a validated questionnaire addressing specific problems of oncologic larynx patients. In this literature review, only three articles using specific head and neck cancer protocols for head and neck cancer were found. These three articles point difficulties to get to a consistent result due to the lack of publications. Another difficulty found is getting to the real necessities of subjects, once if itemizing the analysis of each question, it is possible to realize which aspects are more affected, and therefore, more difficult for the patients, even if the scores are high and pointing to a good quality of life. Thus, qualitative analysis of results are necessary in order to verify specifically which aspects contribute for an impact on the quality of life post SCPL.

Although it was not the purpose of this study to analyze results of quality of life protocols not specific for head and neck cancer, it is important to stress that studies using the Índice de Desvantagem vocal – IDV found scores lower than 40, confirming that the resulting voice after SCPL presented low impact on the quality of life.

Still, three studies affirmed moderate or significant impact on voice-related quality of life, with averages above 43 points, being compatible to dysphonic voices.

**CONCLUSION**

Oncologic head and neck surgeries affect significantly the quality of life of patients since they almost always impact on communication, feeding, self-image of the individual, leading to a consequent prejudice in the re-integration and social living.

Publications regarding the quality of life of patients, using specific head and neck cancer protocols are scarce. Further studies related to quality of life of patients with head and neck cancer are necessary as well as the creation of specific protocols for patients with larynx cancer, once the necessary surgical treatments modify the laryngeal functional aspects.

**REFERENCES**

Supracricoid laryngectomy: literature review


