Objectives: To investigate the patient’s self-perceived efficacy of voice rehabilitation after laryngeal cancer.

Methods: All patients who were diagnosed with laryngeal cancer during the years 2000 through 2011 were asked to participate in a randomized study on voice rehabilitation with a speech–language pathologist. Seventy-nine patients agreed to participate. Thirty-seven of the patients underwent voice rehabilitation after completion of radiotherapy and 42 were included as a control group. The study group filled in the Swedish version of the Self Evaluation of Communication Experiences after Laryngeal cancer (S-SECEL) before and after voice rehabilitation, the control group at parallel times.

Results: Eighty-one percent of the study group had improved vocal and communicative dysfunction measured with the S-SECEL. In the control group, 33% improved during the same period. In the study group, 16% reported a worse self-perceived vocal function, in the control group corresponding values were 47%. Five percent of the patients in the control group did not report any difference. The difference in mean values between the first and second measurement improved for the study group by 8.4 points. For the control group a deterioration of 4.4 was seen.

Conclusion: Voice rehabilitation gives the patient a better self-perceived communicative function. Some patients who did not receive vocal rehabilitation experienced improved voice function, but for the patients who received voice rehabilitation improvement was seen in a majority of the cases.

ABSTRACT

INTRODUCTION

Many patients treated with radiotherapy for laryngeal cancer experience persisting voice impairment1,2. It has been suggested that some spontaneous improvement occurs, however, not to normal function. The voice problems could be due to compensatory behaviors in phonation. Suggestions have been made that these patients would be in need of voice therapy, and that voice therapy would be of benefit for the patients. Despite this, only a few studies exist which address the efficacy of voice rehabilitation after radiotherapy for laryngeal cancer. The studies available are cross-sectional and with a small sample size, but they indicate that voice rehabilitation is efficacious both regarding acoustic, perceptual and patient reported outcome (PRO) measures.

The aim of this study is to investigate the efficacy of voice rehabilitation through a randomized controlled study where the effects are measured with the validated instrument Swedish Self Evaluation of Communication Experiences after Laryngeal cancer (S-SECEL).

RESULTS

A majority of the patients in both groups had early stage glottic tumors. Figure 1 shows the results in mean differences in each group between baseline and follow-up measurements. The mean differences between the voice rehabilitation group and the control group were statistically significant (p < .05) regarding the Environmental, Attitudinal and Total scale of the S-SECEL, where the voice rehabilitation group showed overall improvement of communication while the control group deteriorated. The difference in the general subscale was not statistically significant.

In the voice rehabilitation group, 81% of the patients experienced improvements measured with the S-SECEL total subscale. In the control group, only 33% improved during the same period. Reduced communicative function were reported by 16% in the voice rehabilitation group and 47% in the control group.

S-SECEL subscales

- General (0–15 points) – General attitude about state of mind and acknowledgement of the sickness and its treatment: “Would you describe yourself as outgoing and talkative?”
- Environmental (0–42 points) – How the patient experience their voice in different environments: “Do you have trouble speaking in a large room?”
- Attitudinal (0–45 points) – Attitude about speech and self-perception: “Do you avoid speaking because of your voice?”

Higher scores indicate a greater self-perceived communicative dysfunction.

METHODS AND MATERIALS

Patients treated with radiotherapy for laryngeal cancer at the Sahlgrenska University hospital were asked to participate in a longitudinal study on voice and health related quality of life after laryngeal cancer. Seventy-nine patients agreed to participate and were randomized into a voice rehabilitation group (n = 37) or a control group (n = 42). Voice rehabilitation was performed after completion of radiotherapy and consisted of 10 sessions with a speech–language pathologist during 8 weeks, according to a structured protocol. At baseline (one month post-radiotherapy) and at follow-up (6 months post-radiotherapy) all patients filled in the S-SECEL.

The S-SECEL is a validated questionnaire that consists of 35 questions that addresses communication dysfunction in three subscales and a total score: General, Environmental and Attitudinal. Maximum Total score is 102 points, a higher score indicates a higher self-perceived communicative dysfunction.

CONCLUSIONS

Laryngeal cancer patients who receive voice rehabilitation after radiotherapy report a statistically significant improvement in self-perceived communicative function. Meanwhile, the control group remains unchanged or deteriorates.

Laryngeal cancer patients should, to a greater extent, be offered voice rehabilitation with a speech-language pathologist in order to improve their vocal performance after oncolgical treatment.

DISCUSSION

A statistically significant difference of mean improvement of S-SECEL scores in three of four subscales were reported where the patients who received voice rehabilitation showed greater improvement than the control group. This is in accordance to a study by van Gogh et al.2 who found that the patients who received voice therapy improved compared to the control group.

That study however, was performed on patients who receive radiotherapy or surgery for early glottic cancer and is therefore not completely comparable. This is to our knowledge the only randomized controlled study where the efficacy of voice rehabilitation is investigated.

Further studies also including acoustic and perceptual voice outcome is needed to establish the efficacy of voice rehabilitation.

REFERENCES


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Figure 1. Mean difference for the S-SECEL subscale scores. Negative values indicate improved communicative function.