Efficacy of Voice Therapy in the Treatment of Vocal Nodules in Western Regional Hospital, Pokhara

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Article received: 12th Oct, 2020

Article accepted: 1st Dec, 2020

ABSTRACT

Introduction: Vocal fold nodules present frequently in the ENT outpatient department. Treatment of vocal nodules involves a variety of voice therapies and micro laryngeal surgery. The aim of the study was to evaluate the effectiveness of voice therapy for patients with vocal fold nodules in eliminating or reducing the vocal nodules, rate improvement in voice quality after therapy and to evaluate how many sessions of therapy was required. The study was conducted in Western Regional Hospital, Pokhara, Department of ENT, Head and Neck Surgery.

Materials and Methods: A single institutional retrospective observational longitudinal study was conducted .Total 31 patients with diagnosis of vocal fold nodules who underwent voice therapy sessions from September 2007 to September 2008 were taken from the records for the study. Patient demographics and post therapy outcomes were analyzed using SPSS 21.

Results: Mean age was 35.57+/-12.53 SD of mean. Majority were females (22) and Female: Male ratio was 2.4:1. The mean percentage of patients who attended less than 6 sessions were 60%. Those who attended more than 6 sessions was 40% .Voice quality showed signs of improvement in 22 patients and no change in 3 patients. Out of those who attended, vocal fold nodules disappeared in 20 patients, persisted as grade 1 size in 2 patients and 3 patients didn't show any signs of improvement.

Conclusion: Our results have shown promising role of conservative management by voice therapy for vocal nodules thus lessening the need for surgery

Keywords: Dysphonia , Vocal nodules, Voice therapy.

INTRODUCTION

Vocal fold nodules present frequently in the ENT outpatient department.[1] It is related to the occupation of the patient. Persons who are prone to vocal cord nodules are usually teachers, shopkeepers, social workers, students, singers and also housewives.[2,3] It is commonly seen in people who abuse, misuse and overuse their voice.[4] The number of sessions of voice therapy depends on the degree of dysphonia, size and site of the vocal fold nodules.[5]

Treatment of vocal nodules involves a variety of voice therapies and micro laryngeal surgery .[4] Voice therapy principally involves vocal hygiene, direct facilitation, relaxation and respiration.[4]

The aim of the study is to i) Evaluate the effectiveness of Voice Therapy for patients referred with an ENT diagnosis of vocal nodules in eliminating or reducing the vocal nodule(s); ii) To evaluate how many sessions of therapy were required.

The records were taken from the ENT Department from September 2007 to September 2008.

MATERIALS AND METHODS

This was a retrospective longitudinal study and was conducted in the Department of ENT Head and Neck Surgery, Western Regional Hospital, Pokhara from September 2007 to September 2008.Approval was granted from the Institutional Review Committee of Pokhara Academy of Health Sciences, Pokhara for the study. Patients with a known diagnosis of vocal fold nodules from the records in the Department of ENT were taken for the study. Thirty one patients with a known diagnosis of vocal nodules were assessed for nodule size and severity of dysphonia . Six patients who came for assessment only or were lost to follow up were excluded from the study. They were given voice therapy sessions. We had limited our number of sessions to a maximum of 14. Patients were closely followed up every week until improvement was seen or maximum sessions were reached. After which they were assessed with nasopharyngolaryngoscopy (NPL) and perceptual evaluation of voice quality was done.

We had graded the voice quality of our patients with perceptual assessment . Likewise we had graded the size of the vocal fold nodules according to grading system given by Nardone et.al.[6,7] Confirmation was done by NPL before and after the final sessions.

RESULTS

A total of 25 patients were included who had undergone voice therapy from September 2007 to September 2008.The study group comprised of 22 females and 9 males (2.44:1).Out of them, only 3 male patients and 22 female patients went for therapy while 6 patients had attended for assessment only. Out of the 31 patients, 8 were housewives, 3 were teachers, 15 students, 4 shopkeepers and 1 social worker (Table 1). During the time of presentation grade 1 nodule was present in 11, grade 2 in 2 and grade 3 in 18 patients.(Table 2)

Table1: Occupation

		Frequency	Percent	Cumulative Percent
Val	Housewife	8	25.8	25.8
	Teacher	3	9.7	35.5
	Student	15	48.4	83.9
	Shopkeeper	4	12.9	96.8
	Miscellaneous	1	3.2	100.0
	Total	31	100.0	

Table:2. Vocal nodule grading at the time of presentation

		Frequency	Percent	Cumulative Percent
Val	Grade 1	11	35.5	35.5
	Grade 2	2	6.5	41.9
	Grade 3	18	58.1	100.0
	Total	31	100.0	

Evaluation of voice quality was done by perceptual assessment at the time of presentation. Severe dysphonia was seen in 5 patients, moderate dysphonia was seen in 17 patients and mild dysphonia was seen in 9 patients. Proportionately both male and female patients were suffering more from moderate dysphonia.

Table 3. Voice quality pre therapy

		Severe dysphonia	Moderate dysphonia	Mild dysphonia	Total
Sex	Male	1	7	1	9
	Female	4	10	8	22

Total	5	17	9	31

Out of thirty one patients, fifteen patients attended less than 6 sessions (48.33%) while ten attended more than 6 sessions not exceeding 14 sessions (32.25%). Remaining six(19.35%) attended for assessment only. Out of the 25 patients who attended the voice therapy sessions improved voice was seen in 22 patients (88%)while no change was seen in 3 patients(12%). The severity of dysphonia didn't have strong correlation with the number of sessions. Table 4. The number of sessions however didn't show any strong correlation with severity of dysphonia since 15 patients who attended less than 6 sessions had similar results as compared to the 10 with more than 6 sessions.(Table 5)

Table 4. No of sessions in relation to severity of dysphonia

Voice quality pre therapy	Lost to follow up	<6 sessions	>6 sessions	Total
Severe Dysphonia	0	1	4	5
Moderate Dysphonia	6	8	3	11
Mild dysphonia	0	6	3	9
Total	6	15	10	31

Table 5. Improvement of voice quality with number of therapy sessions(Post therapy).

Voice quality post therapy	Number of Therapy Sessions		Total
	<6	>6	
No change	1	2	3
Improved voice	14	8	22
Total	15	10	25

DISCUSSION

Vocal fold nodule is a cause of dysphonia and commonly presents in the Department of ENT Head and Neck Surgery. Flexible NPL is the mainstay of diagnosis of pathologies of the larynx.[8,9]

According to different literature, voice therapy has equally beneficial results as compared to surgical procedures.[6] The purpose of our study was to start early vocal rehabilitation and avoid invasive surgeries thus reducing morbidity of the patient.[7]

In our study of thirty one patients there were 22 female patients and 9 male patients (2.33:1) which was similar to the study done by Evelyne Van Houtte.[8] During the time of presentation Grade 1 nodule was seen 11, Grade 2 was seen in 2 and Grade 3 was seen in 18 patients.

The greatest number of vocal nodules were seen in students and then housewives followed by shopkeepers similar to study done by Martins et al who observed the predominance of domestic workers students and teachers.[9]

Severe dysphonia was seen in 5 patients, moderate dysphonia was seen in 17 patients and mild dysphonia was seen in 9 patients. Proportionately both male and female patients were suffering more from moderate dysphonia contrary to study done by Nuss RC et al which showed proportionate severity in dysphonia and nodule size.[10] This is probably due to subjectivity of the assessment and intra rater reliability [11]

Fifteen patients attended less than 6 sessions (48.33%) while 10 attended more than 6 sessions not exceeding 14 sessions (32.25%). Remaining

six (19.35%) attended for assessment only. The 25 patients who underwent voice therapy sessions 22(88%) patients showed improved voice quality which was comparable to the study done by McCrory E, whereas 3(12%) showed no change in voice quality.[12]

CONCLUSION

The results have shown a promising role of conservative management by voice therapy in the treatment of vocal fold nodules even in severe dysphonia with grade three nodules. Conservative management by voice therapy and vocal hygiene can lessen the need for micro laryngeal surgery.

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