



A Simple Voice Training Method for Vocal Fold Polyps that Emphasizes Abdominal Respiration

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Abstract

Background: We have devised a simple voice training method that emphasizes the abdominal type of respiration. Voice therapy is considered the first choice for vocal fold nodules. Previously, our voice training method was demonstrated to improve all cases with vocal fold nodules. Some hospitals have selected surgical therapy for vocal fold polyps. Our voice training method was employed for vocal fold polyps, including cases with postoperative recurrence.

Subjects and methods: None of the 25 cases of vocal polyps had improved from conservative therapy. Six of our cases (25) were postoperative recurrence. All cases were treated by our method of voice training alone using no other therapy (e.g., silence therapy, medication, surgery) during the voice training period.

At our out-patient clinic, voice therapy was administered using a simple voice training method that relies on the abdominal type of respiration. Concerning the home training course, all patients received our voice training manual and exercised twice or three times-daily for 10 minutes. Moreover, we instructed them as follows. When patients experience stressed phonation during daily conversation, they corrected to naturally relaxed phonation by exhaling with abdominal respiration. Follow up evaluations were scheduled for every month after their initial visit.

Results: In 19 of 25 cases with vocal polyps, the symptoms had disappeared (15) or reduced (4). Eleven of the improved cases (19) showed disappearance (9) or reduction (2) within 3 months. In those with postoperative recurrence of a vocal fold polyp, four of six cases (66.7 %) showed disappearance (2) or reduction (2) after using our method of voice training.

Conclusion: These results suggest that our method of voice training could improve many cases with vocal fold polyps. Therefore, this method should be the first choice for some cases with vocal fold polyps as well as vocal fold nodules.

Keywords: Abdominal type of respiration; Voice training; Vocal fold polyps

Introduction

It has been recommended that doctors provide instruction in voice therapy in cooperation with speech therapists [1]. However, speech therapists are not fully available in Japan.

We have already devised a simple voice training method that relies on the abdominal type of respiration so that a doctor alone can provide instruction in voice therapy. Voice therapy is known to be the first choice for vocal fold nodules in Japan [2]. Previously, we described the improvement of all 8 cases of vocal fold nodules using our voice training method [3]. Generally, surgery had been the first choice for vocal fold polyps. However, other hospitals reported that voice training could be effective for some cases with vocal fold polyps [4]. In this study, our voice training method was employed for vocal fold polyps including cases with postoperative recurrence. We tried to make our evaluation of this vocal training method as objective and clear as possible. The grade of the effectiveness of our training was evaluated by changes in the laryngeal diseases treated by this method.



Figure 1: Endoscopic finding of vocal fold polyp (Case No 21 in Table 1). Left: Left vocal fold polyp case at the first medical examination had hoarseness. This patient underwent our method of voice training while waiting for surgery. Right: Since the vocal fold polyp disappeared after voice training for 2 months, we cancelled her surgery.

Subjects and Methods

In our out-patient clinic, from April 2011 to April 2018, voice therapy was performed based on a simple voice training method that relies on abdominal respiration. Our voice training indications have not included cases with large vocal fold polyps or moderate or severe polypoid vocal folds [5,6]. All our patients (25) were instructed about surgical therapy and our voice training method. As a result, they selected our voice training method. Six of our cases were postoperative recurrence. Two cases underwent our method of voice training while waiting for surgery [7, 8]. All patients were treated using our voice therapy alone with no other therapy (e.g., silent therapy, medicine, operation) during the voice training period. Follow up evaluations were scheduled for every month after their initial visit. All patients could be observed more than 3 months after starting the voice training.

At the first medical examination was done as follows [3]. Patients practiced exhaling from the mouth with inward abdominal movement and inhale nasally with outward abdominal movement while relaxing the upper half of the body. Next, patients practiced voice training with naturally relaxed phonation using first “f” and gradually changing from “f” to “v”, while exhaling with abdominal respiration [9]. Our voice training is intended to prevent excessive stress on the vocal fold due to inadvertently strong laryngeal phonation. For the home exercise program, all patients received a voice training manual and practiced twice or three times-daily for 10 minutes. Moreover, we instructed them as follows. If patients sensed that phonation during daily conversation excessively stressed the vocal fold, they should correct to naturally relaxed phonation by exhaling with the abdominal type of respiration.

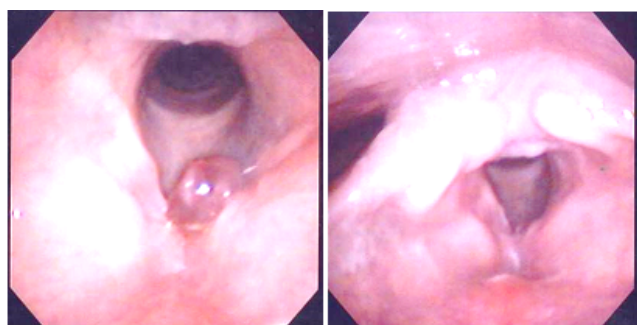


Figure 2: A case in which the postoperative recurrent polyp disappeared after using our voice training method (Case No16 in Table1). Left: A left recurrent polyp appeared at 2 months after the operation. Right: This postoperative recurrent polyp disappeared after using our voice training method for one month.

Evaluation of the hoarseness has popularly been done using the GRBAS scale (grade (G), rough (R), breathy (B), asthenic (A), strained (S))[2]. The “G”scale is indicated by using four grades of the severity of hoarseness (0: normal, 1: slight, 2: moderate, 3: extreme). However, the GRBAS scale is a subjective rather than objective evaluation. Therefore, we tried to make our evaluation as objective and clear as possible [4,10]. The evaluation grade of the therapy effectiveness for laryngeal disease itself was classified into three types as follows: “disappearance”, “reduction”, “no change”. Concerning the criterion for “reduction”, the diseased volume was less than one-half of that before voice therapy.

Results and Discussion

Nineteen of 25 (76%) cases with vocal fold polyps could be improved by our method of voice training (Table 1). In the improved cases (19), the lesions showed disappearance (15) or reduction (4). Since we did not examine a control group (non-voice training), we could not compare our data with that group. However, eleven of the improved cases (19) showed disappearance (9) or reduction (2) within 3 months. These cases that improved during the short period might represent evidence for some effects of the voice training [2, 11]. Patients that could master the abdominal respiration described that speaking felt comfortable. All patients were particularly checked concerning abdominal respiration at every medical examination. Some cases with hyperfunctional dysphonia at the first medical examination showed improvement by our method of voice training together with reduced anterior-posterior contraction of the larynx [4, 12-14].

	Case Effectiveness	Period of hoarseness	Period of voice training	Effectiveness
1	61 years M	unknown	4 months	disappearance
2*	29 years M	5 years	2 months	disappearance
3	37 years F	8 months	2 months	disappearance
4	64 years M	11 days	4 months	disappearance
5	59 years M	6 months	3 months	no change
6	71 years M	2 months	5 months	disappearance
7	31 years F	1 year	3 months	disappearance
8	23 years F	3 months	4 weeks	disappearance
9	79 years M	2 years	3 months	disappearance
10	51 years F	2 months	6 months	disappearance
11	70 years F	4 months	5 months	disappearance
12	44 years M	6 months	3 months	no change
13	51 years M	6 months	6 months	disappearance
14	39 years F	3 weeks	7 months	disappearance
15	59 years M	6 months	3 months	no change
16*	55 years F	2 months	1 month	disappearance
17	52 years M	6 months	3 months	no change
18*	47 years M	unknown	6 months	no change
19	46 years M	1 year	3 months	disappearance
20	72 years F	2 months	2 months	reduction
21	75 years F	1 months	2 months	disappearance
22*	29 years F	1 months	2 years	reduction
23*	52 years M	6 months	3 months	no change
24	39 years F	8 months	3 months	reduction
25*	69 years F	2 months	2 months	reduction
M: Male F: Female *postoperative recurrence cases				

Table 1: Voice training for vocal fold polyp.

However, some patients with inadequate abdominal respiration did not improve.

Two cases with vocal fold polyps underwent our method of voice training while waiting for surgery, and both cases showed disappearance within 2 months (Figure 1). In those with postoperative recurrence of a vocal fold polyp, four of six cases (66.7 %) showed disappearance (2) and reduction (2) after using our method of voice training (Figure 2).

Voice therapy is known to be the first choice for vocal fold nodules in Japan. Yamaguchi [5] reported that the first choice for vocal fold polyps was surgery, followed by protection against postoperative recurrence by voice training. Two of our cases with vocal fold polyps

that practiced our method of voice training while waiting for surgery showed disappearance within 2 months. Umeno [4] described that 25% of vocal fold polyp cases treated by voice training alone showed disappearance. In 15 of our 25 cases (60.0%) with vocal fold polyps treated by our method of voice training, the polyps had disappeared. In patients with postoperative recurrence of a vocal fold polyp, four of 6 cases (66.7%) improved after using our method of voice training. Therefore, our method of voice training should be the first choice for some cases with vocal fold polyps as well as vocal fold nodules.

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