Strategies for Vocal Fold Nodules
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Abstract
OBJECTIVES: During these 5 years, 902 patients with vocal fold nodules were treated in Tokyo Voice Center. The purpose of this paper is to obtain the new design of the treatment strategy for the vocal fold nodules by reviewing the clinical records of these 902 patients.

MATERIALS AND METHODS: The study was carried out by an analysis of 902 patients (113 males, 789 females, mean age; 32.9 years). In all patients, phoniatric, videostroboscopic and otolaryngological examinations were completed. The clinical records of these patients were retrospectively reviewed.

RESULTS: Of the 165 patients treated by voice therapy alone, complete remission (CR) rate was 43%. In CR cases, average treatment time was 3.1 months. Compared with no response cases, of the patients whose duration of hoarseness is within 3 months, CR cases account for 71%.

CONCLUSIONS: Strategies for vocal fold nodules was thought to be as follows. 1) Steroid therapy is recommended for the patients whose deadline for the performance schedule is within three months. 2) Laryngomicrosurgery should be chosen in the patients whose deadline is within one month. 3) Voice therapy should be selected when duration of history is within 3 months and when treatment length could be longer than 3 months.

Introduction
During these 5 years, 902 patients with vocal fold nodules were examined and treated in Tokyo Voice Center.

The purpose of this paper is to obtain the new design of the treatment strategy for the vocal fold nodules by reviewing the clinical records of these 902 patients.

Methods
The clinical records of these patients were retrospectively reviewed with respect to the distribution by age, sex, smoking, and occupational vocal usage.

In all patients, phoniatric analysis and videostroboscopic observations were performed in addition to the usual otolaryngological examination.

Outcomes of the treatment were evaluated by using videostroboscopy.

Results of surgical treatment

Additional treatment in cases of postoperative complications

The Newly Designed Strategies

Conclusion

4. Strategies for vocal fold nodules was thought to be as follows.
1) Steroid therapy is recommended for the patients whose deadline for the performance schedule is within one month.
2) Laryngomicrosurgery should be chosen in the patients whose deadline for the performance schedule is within three months or whose history of hoarseness is longer than three months.
3) Voice therapy should be selected when duration of history is within 3 months and when treatment length could be longer than three months.

| N | D N | D N | N | CR | CR | N | S | Leng.
|---|---|---|---|---|---|---|---|---
| Voice therapy | 106 | 59 | 46 | 43% | 4.5 | 3.1M | hygienic | 116 | 27 | 89 | 35 | 39% | 5.1 | 3.1M |
| Steroid therapy | 222 | 68 | 154 | 56% | 2.8W | system | 110 | 23 | 87 | 50 | 56% | 2.7W |
| Systemic & local | 97 | 40 | 57 | 30 | 53% | 3.7M | system | 15 | 5 | 10 | 6 | 60% | 1.7W |

| N | number of cases, D; dropout, CR; complete remission, N; number of cases, D; dropout, CR; complete remission, N; number of cases, D; dropout, CR; complete remission |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| smoking | 11 | 3 | 8 | 67% | no smoking | 75 | 43 | 32 | 57% | EVP | 12 | 5 | 7 | 42% | VP | 39 | 18 | 21 | 46% | future EVP | 9 | 4 | 5 | 44% | non future EVP | 26 | 19 | 7 | 73% | history; duration of hoarseness
| male | 5 | female | 41 | male | 1 | female | 39 | male | 1 | female | 39 | male | 1 | female | 39 | male | 1 | female | 39 | male | 1 | female | 39 | male | 1 | female | 39 |
| smoking | 11 | 3 | 8 | 67% | no smoking | 75 | 43 | 32 | 57% | EVP | 12 | 5 | 7 | 42% | VP | 39 | 18 | 21 | 46% | future EVP | 9 | 4 | 5 | 44% | non future EVP | 26 | 19 | 7 | 73% | history; duration of hoarseness
| history; duration of hoarseness | 18 months and when treatment length could be longer than three months.

Comparison between the cases of CR and NR treated by voice therapy alone

| N | D N | D N | N | CR | CR | N | S | Leng.
|---|---|---|---|---|---|---|---|---
| Voice therapy | 106 | 59 | 46 | 43% | 4.5 | 3.1M | hygienic | 116 | 27 | 89 | 35 | 39% | 5.1 | 3.1M |
| Steroid therapy | 222 | 68 | 154 | 56% | 2.8W | system | 110 | 23 | 87 | 50 | 56% | 2.7W |
| Systemic & local | 97 | 40 | 57 | 30 | 53% | 3.7M | system | 15 | 5 | 10 | 6 | 60% | 1.7W |

| N | number of cases, D; dropout, CR; complete remission, N; number of cases, D; dropout, CR; complete remission, N; number of cases, D; dropout, CR; complete remission |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| smoking | 11 | 3 | 8 | 67% | no smoking | 75 | 43 | 32 | 57% | EVP | 12 | 5 | 7 | 42% | VP | 39 | 18 | 21 | 46% | future EVP | 9 | 4 | 5 | 44% | non future EVP | 26 | 19 | 7 | 73% | history; duration of hoarseness
| male | 5 | female | 41 | male | 1 | female | 39 | male | 1 | female | 39 | male | 1 | female | 39 | male | 1 | female | 39 | male | 1 | female | 39 | male | 1 | female | 39 |
| smoking | 11 | 3 | 8 | 67% | no smoking | 75 | 43 | 32 | 57% | EVP | 12 | 5 | 7 | 42% | VP | 39 | 18 | 21 | 46% | future EVP | 9 | 4 | 5 | 44% | non future EVP | 26 | 19 | 7 | 73% | history; duration of hoarseness

Rate of postoperative complications, mainly recurrence, in the following categories

| REC (101) | non REC (106) | N | D N | D N | N | CR | CR | N | S | Leng.
|---|---|---|---|---|---|---|---|---|---|---|---|
| smoking | 49 | 23 | 46% | no smoking | 201 | 81 | 40% | EVP | 15 | 31 | 68% | VP | 120 | 50 | 42% | future EVP | 16 | 9 | 56% | non future EVP | 47 | 14 | 30% | 88% | preoperative voice therapy
| none | 217 | 92 | 43% | hygienic & voice | 35 | 12 | 35% | 50% | postoperative voice therapy
| none | 20 | 5 | 25% | hygienic | 60 | 22 | 35% | 82% | postoperative voice therapy
| none | 170 | 77 | 46% | hygienic & voice | 170 | 77 | 46% | 68% | REC; postoperative complications, mainly recurrence
| CR; complete remission, NR; no response |

The clinical records of 902 patients with vocal fold nodules, examined and treated in Tokyo Voice Center during these 5 years, were studied retrospectively.
1. Of the 165 patients treated by voice therapy alone, CR rate was 43%. In CR cases, average treatment time was 3.1 months. Compared with no response cases, of the patients whose duration of hoarseness is within 3 months, CR cases account for 71%.
2. Of the 110 patients performed steroid therapy, CR rate was 56%. In CR cases, average treatment time was 2.8 weeks.
3. Surgical treatments were chosen in 250 cases. Although complications, mainly including recurrences, were seen in 42%, 74% of those patients obtained CR after additional treatments.