EXECUTIVE'S DYSPHONIA

A Study of 49 Patients

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STRAIN and tension are widely recognized as affecting functions of the human nervous system. Communication by speech is a synthesis of functions whose finely balanced co-ordinations are easily disturbed by stimuli from the autonomic and sympathetic nervous systems. The business executive is exceptionally vulnerable to the development of functional vocal disorders. His work is accomplished by various means of oral communication—dictation, conferences, conversations by telephone—and strain and tension are inherent threats to his position of commanding or supervising other personnel, and even to his survival in today's highly competitive commercial enterprises.

It is the purpose of this paper to report the results of a study of 49 executives having functional vocal disorders (executive's dysphonia) and to report nonvocal symptoms that are present.

Selection of Patients

The records of 49 businessmen who had been referred for examination of the voice were selected on the basis of two criteria: (1) the patient held an executive position that involved command of and communication with a large number of persons, (2) his vocal disorder could be classed as functional dysphonia. Patients having contact ulcers or nodules in the larynx were included because these conditions are the result of abuse and misuse of the voice and generally can be treated without an operation.

Findings

The executives represented 12 main branches of business, a majority of which comprised sales and personnel, and included manufacturing, accounting, and engineering (Table 1). The ages of the patients ranged from 32 to 70 years, but 28 of the 49 patients were from 46 to 60 years of age (Table 2). Executives in this age group generally are regarded as being intellectually mature, as having sound judgment, and professionally as having arrived somewhere near the top of their fields of endeavor.

Some of the patients initially requested complete physical examinations, and because of the findings of vocal difficulties they were referred to the Department of Otolaryngology. However, most of the patients first reported their symptoms to the otolaryngologists and then were referred to other departments because of additional symptoms that possibly were closely related to the vocal problems.

Table 1. — *Types of business of 49 executives having dysphonia*

Executive field	Type of dysphonia, number of patients			
	Functional	Contact ulcers	Nodules	Total
Sales (not automobiles)	10	5	3	18
Manufacturing	4	1	1	6
Accounting	3	2	—	5
Engineering	3	2	—	5
Advertising	2	1	—	3
Construction	2	—	—	2
Purchasing	1	1	—	2
Utilities	1	1	—	2
Auto sales	2	—	—	2
Chain store supervision	2	—	—	2
Government	—	—	1	1
Union management	1	—	—	1
Total	31	13	5	49

Table 2. — *Age distribution of 49 executives having dysphonia*

Age, years	Type of dysphonia, number of patients			
	Functional	Contact ulcers	Nodules	Total
31-35	1	—	1	2
36-40	3	1	2	6
41-45	2	2	—	4
46-50	8	4	1	13
51-55	5	—	—	5
56-60	7	2	1	10
61-65	3	4	—	7
66-70	2	—	—	2
Total	31	13	5	49

The otolaryngologists reported 54 findings of diagnostic significance related to the nose, throat, and larynx in the 49 patients (Table 3). Forty-four of these findings were from the patients having functional dysphonia, six from the

Table 3.—*Findings of diagnostic significance in 49 executives having dysphonia*

Finding	Type of dysphonia, frequency of findings			
	Functional	Contact ulcers	Nodules	Total
Reported by Department of Otolaryngology				
Chronic rhinitis	17	6	2	25
Chronic laryngitis	10	—	2	12
Faulty vocal-cord action	7	—	—	7
Nervous tension, headaches	6	—	—	6
Carotid tenderness	4	—	—	4
Total	44	6	4	54
Reported by other departments				
Gastrointestinal disturbances	16	4	1	21
Anxiety tension state	13	4	2	19
Pains in chest and low back	7	2	—	9
Asthma (hay fever)	4	1	—	5
Chronic nervous exhaustion	4	—	—	4
Tension in neck and shoulders	2	1	1	4
Dizziness	2	—	—	2
Total	48	12	4	64
Total, all departments	92 (78%)	18 (15%)	8 (7%)	118 (100%)

patients having contact ulcers, and four from the patients having nodules. Chronic rhinitis was the single most frequent finding.

Physicians in other departments reported 64 findings of diagnostic significance (Table 3), 10 more than the number reported by the otolaryngologists. Forty-eight of the findings were from patients having functional dysphonia, 12 from those having contact ulcers, and four from those having nodules. The most frequent findings were gastrointestinal disturbance including gastric, peptic, or duodenal ulcers, and constipation, and anxiety tension state.

To summarize the medical findings: among the 49 executives there were 118 findings of diagnostic significance, or an average of more than two findings per patient. Although the patients having functional dysphonia comprised only 63 per cent of the entire group, their diagnostic findings comprised 78 per cent of the total.

Interviews and examinations by the vocal therapist produced still another large assortment of observations and diagnostic findings. The duration of the

vocal disorders ranged from one month to 20 years: in 14 patients for from one to three months; in 9 for six months; in 17 for one year; in 5 for from two to three years; in 1 for five years; and in 3 for twenty years.

The 49 patients reported 243 symptoms: 153 by those having functional dysphonia, 63 by those having contact ulcers, and 27 by those having nodules. Hoarseness was reported by all patients. In Table 4, the symptoms are listed according to frequency. A total of 194 vocal deviations such as hoarseness, monotony, and breathy voice was observed by the therapist, an average of four deviations per patient. The types of deviations are recorded in order of frequency in Table 5.

More than half of the 49 patients had limited ranges of speaking pitch (Table 6). An indication of their limitations is obtained from the comparison of their ranges with the range of intonation of a normal man's voice, which is about one and one-half octaves or 18 half tones; only 17 of the patients had a range of 16 or more half tones. A still more indicative observation was the level of pitch that each patient used in relation to the total range of his speaking voice. The man with a normal voice usually uses a level of pitch that is at the lower tone in the middle third, or the upper tone in the lower third of his total tonal range. This pitch is equal to six or eight half tones above the lowest tone in his total range. However, practically all of the executives spoke below their respective normal levels of pitch. In fact, 12 of them spoke at the lowest pitch of their tonal ranges, and 15 others, within a full tone above it. Only four of the executives may be said to have spoken at their normal levels of pitch.

Table 4.—*Symptoms reported by 49 executives having dysphonia*

Symptoms	Type of dysphonia, frequency of symptoms			
	Functional	Contact ulcers	Nodules	Total
Hoarseness	31	13	5	49
Vocal fatigue	24	7	1	32
Tension in neck, jaw, and lips	17	10	4	31
Throat cleared often	17	7	3	27
Sore muscles in neck	16	7	4	27
Voice better in morning	15	4	3	22
Throat dry, burning, sore	12	6	6	24
Voice better on Monday	8	3	—	11
Excess mucus	5	2	—	7
Globus	4	2	1	7
Shortness of breath	4	2	0	6
Total	153	63	27	243

Treatment

In addition to voice therapy that was recommended for all 49 patients, other forms of treatment were advised as indicated in Table 7. Voice therapy was directed toward the correction of the many symptoms that the patients reported or of the deviations that the therapist observed. Since the most outstanding problem was the low-pitched voice, efforts were primarily directed toward establishing the pitch of each patient's speaking voice at a level that would create clear phonation under conditions of the greatest efficiency of voice production. The patients having ulcers or nodules were given special attention in this respect. The patients having functional dysphonia had many correlated vocal problems that could be solved only by re-establishing what might be called *relaxed natural phonation.* In many patients this was effected only after concentrated training in proper breathing (usually diaphragmatic), in adequate air support, and in simple or basic phonation under conditions of physical relaxation which often were aided by external heat treatment.

Each patient was instructed in the mechanisms of voice production so that he could understand the mistakes he had been making and the process required for him to re-establish an adequate voice. He also was told that the correction of his vocal defect could best be accomplished through a series of guided-practice sessions. Thirty-seven of the patients accepted the offer of an individual training program and most of them had from one to three lessons in addition to the initial interview. The duration of the treatment ranged from one to nine months (Table 8).

Table 5. — *Vocal deviations in 49 executives having dysphonia*

Type of deviation	Type of dysphonia, frequency of deviation			
	Functional	Contact ulcers	Nodules	Total
Weak volume	31	9	4	44
Hoarseness	25	12	5	42
Pitch too low	24	13	2	39
Poor sense of pitch*	13	6	2	21
Monotonous voice	13	5	1	19
Gravel voice	6	—	—	6
Breathy voice	3	2	2	7
Huskiness	3	1	—	4
Voice breaks	2	5	4	11
Pitch too high	1	—	—	1
Total	121	53	20	194

**Patient could not reproduce a presented tone within one or two full tones.*

Table 6.—*Pitch of 45* executives having dysphonia*

Speaking pitch	Type of dysphonia, number of patients			
	Functional	Contact ulcers	Nodules	Total
Range—half tones (normal average range is 18 half tones)				
0-5	3	—	—	3
6-10	3	—	1	4
11-15	15	3	3	21
16-20	8	5	1	14
21-25	—	3	—	3
Total	29	11	5	45
Speaking pitch, half tones above lowest tone in range (6 half tones above lowest tone in range is normal)				
0 (same)	10	1	1	12
1	5	3	1	9
2	3	2	1	6
3	5	3	—	8
4	2	1	1	4
5	1	1	—	2
6	1	—	1	2
7	1	—	—	1
8	1	—	—	1
Total	29	11	5	45

**Four patients were not tested.*

Results of Voice Therapy

Voice therapy was successful in all of the 37 patients who participated in the training program: 31 achieved clear voices and 6 had improved voices (Table 8). In nine of the 10 patients having contact ulcers who received voice therapy, the ulcers disappeared or improved; and in all five of the patients having nodules, the nodules cleared or improved, as reported by the otolaryngologists. Patients have remained symptom-free in the follow-up period ranging from three months to four years. The three patients having contact ulcers who refused therapy remained unimproved; in one, an additional granulation developed and surgical treatment was necessary. Of the nine patients having functional dysphonia who did not receive voice therapy here, five refused the therapy and appeared to be satisfied with the results of tranquilizers; three

Table 7. — *Types of treatment advised for 49 executives having dysphonia*

Therapy advised	Type of dysphonia, number of patients			
	Functional	Contact ulcers	Nodules	Total
By otolaryngologists				
Antihistaminics or hypoallergenics	9	5	2	16
Diet and vitamins	7	5	4	16
No smoking	6	—	—	6
Prednisone	1	2	—	3
Tranquilizer	—	2	—	2
Total	23	14	6	43
By other physicians				
Tranquilizers, sedatives	9	5	2	16
Heat, massage, relaxation	8	4	—	12
Antihistaminics	2	—	—	2
Antispasmodics	—	1	3	4
Total	19	10	5	34
Grand total	42	24	11	77

refused the therapy because they were "too busy," and one was referred to another therapist.

Report of Four Typical Cases

Case 1. A 42-year-old man, an executive of a large corporation, reported vocal fatigue after talking at length or singing. The fatigue often was accompanied by a feeling, described by him as of "having my throat torn out" and of an obstruction and dryness in the throat. His voice was practically inaudible at the end of the working day. He shunned social events, to avoid talking, and he was desperately concerned about the possible failure of his voice at important sales meetings. Shortly before examination here the vocal symptoms had been unusually severe during and after a long, trying sales meeting. Although he had taken penicillin and nicotinic acid, prescribed by three local physicians, the vocal symptoms had not been relieved.

The otolaryngologic examination here revealed a chronic rhinitis, chronically irritated larynx, and excessive mucus that caused him to clear his throat frequently. The patient's voice was breathy, weak, husky, and unprojected. He had minimal labial and jaw action, his lips were held tensely in a straight line, and his larynx was pulled upward

Table 8. — *Data on 49 executives having dysphonia*

Therapy and status	Type of dysphonia, number of patients			
	Functional	Contact ulcers	Nodules	Total
Number of lessons				
Interview only	9	3	0	12
1 to 3	16	4	4	24
4 to 6	6	3	—	9
7 to 12	—	3	1	4
Total	31	13	5	49
Duration of therapy				
Interview only	9	3	—	12
1 month	9	5	3	17
2 months	11	3	2	16
3 to 5 months	2	1	—	3
8 months	—	1	—	1
Total	31	13	5	49
Status after therapy *				
Voice				
Clear	17	9	5	31
Improved	5	1	—	6
Larynx				
Clear	—	9	3	12
Improved	—	—	2	2

**Twelve did not receive voice therapy here (nine having functional dysphonia and three having contact ulcers).*

a full inch on simple phonation. The diagnosis was functional dysphonia. The gastroenterologists reported that he had an irritable colon.

The recommended treatment consisted of a hypoallergenic diet, an antihistaminic, Co-Pyronil (pyrrobutamine compound, Lilly), and voice therapy. Voice therapy was directed toward the development of adequate breath support through diaphragmatic breathing, relaxation of the muscles of the neck, face, and jaw, and a raise in pitch from G below low-C to low C. During the five lessons given during four months, the patient was entirely co-operative. Two weeks after therapy was begun his voice was greatly improved in clarity and the lump in his throat was gone; 10 weeks after therapy was begun his voice was practically normal, and one month later the dryness in his throat was gone and he was able to direct all conferences with a strong voice. Nine months after therapy was begun, the patient had no vocal symptoms; he had attended two conventions without having a vocal problem.

Case 2. A 45-year-old man, a sales executive, had been hawking frequently and coughing for two years because of increasing irritation in the throat. After a strenuous sales campaign he had pain on each side of the larynx. Three otolaryngologists treated the disorder with antibiotics, but a fourth otolaryngologist found a contact ulcer and referred the patient to our Department of Otolaryngology.

At initial examination here, the patient reported that he felt "something" in his throat, and that the pain that had been intermittent now was constant. He cleared his throat frequently and violently, and swallowed often. He occasionally had nausea, said he "felt whipped" at night and had to rub the muscles of his neck for relief. He had built up a fine business but now was almost constantly anxious both at work and at home.

The otolaryngologic diagnosis was contact ulcer on the right vocal cord process. The patient was advised to stop smoking at once, and to take voice therapy. Analysis of his voice indicated a low-pitched, weak but rough voice with flabby action of the vocal cord and inadequate breath support. Therapy was directed toward elevation of the pitch of his voice, development of a sustained tone, and elimination of the frequent nervous clearings of the throat. Methods of general relaxation were demonstrated to him in the Department of Physical Medicine. One week later, the patient was more relaxed; he had stopped clearing his throat; and his voice was clearer as well as higher in pitch. Two weeks after therapy was begun, his voice was clear, strong, and well projected. He had read aloud for two hours without fatigue, pain, huskiness, or tension, and was free from nausea and anxiety. Such extensive use of the voice is not recommended at such an early stage of therapy, but it demonstrates the patient's eagerness to rehabilitate himself. Within one month after the beginning of therapy, a healing membrane was observed over the ulcer. The patient was seen monthly for six months and had no recurrence of the lesion.

Case 3. A 59-year-old man, an executive mill accountant, had symptoms resembling those of a cold 18 months prior to examination here, which resulted in a whispering voice that had not completely recovered. He had been treated for laryngitis.

The patient had an extremely weak, breathy, half-aphonic trembling voice at a pitch higher than that of the average man. He appeared to be reluctant to talk for fear of losing his voice completely. The muscles of his neck bulged and his clavicle rose prominently during phonation. He reported that his throat ached and felt cramped after he had talked. Though he was short of breath he had adequate vital capacity. His "voice grew tired" before the end of the day and he dreaded meeting visitors in his office because of the additional talking it required.

The otolaryngologic diagnosis was tension dysphonia, and voice therapy was recommended. Three lessons in voice and two demonstrations of relaxation including the use of an infrared lamp were given within one month. At the time of the second lesson his voice had improved, but tension remained in the neck and the shoulders. One week later his phonation was steadier and the volume in his voice was greater. His acquaintances did not recognize his improved voice over the telephone. He continued to use the infrared lamp at home, and to practice sustaining his tone and increasing his volume. In spite of two emotionally upsetting personal crises, he maintained the gain in vocal power, and within one month after his first lesson he had a normal voice and was free from abnormal muscular tensions.

Case 4. A 48-year-old man, owner of a large business, and a part-time politician, had a voice disorder periodically for more than 10 years. The disorder had begun when he attended a convention where there was loud talking in a smoke-filled room. His voice became weak and raspy but subsequently returned to normal. At every succeeding convention he had the same experience, except that after the last convention he did not recover his voice. He was treated with oil spray in the throat and heat lamp to the

throat twice each week for one year by a local physician. Upon the advice of an otolaryngologist he rested his voice for three weeks; his voice improved, but the hoarseness returned when he resumed a normal amount of talking. He found that whenever he went fishing his voice improved!

At examination here, the diagnosis was bilateral nodules of the vocal cords. Voice therapy was prescribed. The voice therapist reported that the patient's voice was extremely rough, raspy, and low pitched, his breathing was clavicular, the lip movement was poor, and he cleared his throat frequently. Therapy was directed toward raising the pitch of his speaking voice two full tones and developing diaphragmatic breathing with adequate air support and with smooth, relaxed intonation. Three weeks after two lessons given two weeks apart, and practice at home, the patient attended a convention, and for the first time in 10 years returned home with a normal voice. Five weeks after beginning therapy, all symptoms of irritation in the throat had disappeared. Members of his club commented on the improvement in his voice. Laryngeal examination at the end of six months showed no evidence of the nodule. Four years later the patient still had a good voice despite his regular participation at conventions and his cheering at ball games.

Summary

A study was made of 49 executives having vocal disorders originating from misuse and abuse (functional dysphonia, contact ulcers, or nodules), executive's dysphonia. The otolaryngologists reported 54 findings of diagnostic significance, the most frequent of which were chronic rhinitis (in 25 patients) and chronic laryngitis (in 12); while specialists from other departments reported 64 findings of diagnostic significance, the most frequent of which were anxiety tension states or chronic nervous exhaustion (in 23), and gastrointestinal disorders (in 21). In addition, the 49 patients reported 243 symptoms, of which hoarseness was the most common, being mentioned by all. The duration of the vocal defects ranged from one month to 20 years. A total of 194 vocal deviations was observed by the therapist, an average of four deviations per patient.

Voice therapy was recommended for all 49 patients. Other forms of treatment also were advised, including antihistaminics, hypoallergenics, diet, vitamins, tranquilizers or sedatives, heat, massage, and general relaxation.

It is believed that best results are obtained from combined therapy consisting of voice lessons and medical measures. Treatment was successful in each of the 37 patients who accepted voice therapy; each one achieved a clear or an improved voice.