What to Expect During a Visit With a Voice Doctor. Part I: The History

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UNTIL THE 1980s, MOST PHYSICIANS caring for patients with voice disorders asked only a few basic questions, such as: “How long have you been hoarse?”, “Do you smoke?”, etc. The physician’s ear was the sole “instrument” used routinely to assess voice quality and function. Visualization of the vocal folds was limited to looking with a mirror placed inside the mouth using regular light, or to direct laryngoscopy (looking directly at the vocal folds through a metal pipe or endoscope) under anesthesia in the operating room. Treatment was generally limited to medicines for infection or inflammation, surgery for bumps or masses, and no treatment if the vocal folds looked “normal.” Occasionally “voice therapy” was recommended, but the specific nature of therapy was not well controlled, and results were often disappointing. Since the early 1980s, the standard of care has changed dramatically. Singing teachers and their students should be familiar with current standards of practice in voice care. These are covered in much greater detail in other sources, but this two part article is written to provide an introduction and overview of what a singer reasonably should expect from his/her laryngologist.

What kinds of questions are expected from one’s doctor?

Correct medical diagnosis in all fields often hinges on asking the right questions, and listening carefully to the answers. This process is known as “taking a history,” and is usually the first step of the initial office visit encounter. The history may be taken directly by the physician or by a nurse or medical assistant, who then relates the history to the physician. Recently, medical care for voice problems has utilized a markedly expanded comprehensive history that recognizes that there is more to the voice than simply the vocal folds. Virtually any body system may be responsible for voice complaints. In fact, problems outside the larynx often cause voice dysfunction in people whose vocal folds appear fairly normal, and these issues need to be relayed to the physician and/or medical staff at the time of the history. Regardless of whether or not the patient feels that portions of his or her medical or
surgical history, including the use of medications, herbal remedies, or vitamin supplements are relevant to the voice problem, it is extremely important that the voice doctor and the voice team are aware of everything that currently affects or has in the past affected the function of the entire body.

1. Describe your hoarseness.

The first question in the office encounter normally asks the individual to describe in detail the difficulties that he/she is having with his/her voice. Most people with voice problems complain of "hoarseness" or "laryngitis." A more accurate description of the problem often is helpful in identifying the cause, and the laryngologist usually will ask several questions to help him/her better understand the voice problem and its possible causes.

Hoarseness can be described as raspiness, which is a coarse, scratchy sound caused most commonly by abnormalities on the vibratory margin of the vocal fold. These may include swelling, roughness from inflammation, growths, scarring, or anything that interferes with vocal fold vibration. Such abnormalities produce turbulence at the level of the glottis, which we perceive as raspiness.

Breathiness is caused by lesions (abnormalities) that keep the vocal folds from closing completely, including paresis (partial weakness), paralysis (complete weakness), cricoarytenoid joint injury or arthritis, vocal fold masses, scarring, or atrophy of the vocal fold tissues. These abnormalities permit air escape when the vocal folds are supposed to be tightly closed. We hear this air leak as breathiness.

Fatigue of the voice is the inability to continue to phonate for extended periods without change in vocal quality. The voice may fatigue by becoming hoarse, losing range, changing timbre, breaking into different registers, or by other uncontrolled behavior. These problems are especially apparent in actors and singers. A well trained singer should be able to sing for several hours without developing vocal fatigue. Fatigue often is caused by misuse of abdominal and neck musculature, or overuse (singing or speaking too loudly or too long). Vocal fatigue also may be a sign of general tiredness, sleep apnea, thyroid abnormalities, myasthenia gravis, or other serious illnesses.

Volume disturbance may present as inability to speak or sing loudly or softly. Each voice has its own dynamic range. Professional voice users acquire greater loudness through increased vocal efficiency. They learn to speak and sing more softly through years of laborious practice that involves muscle control, and development of the ability to use the supraglottic resonators effectively. Most volume problems are secondary to intrinsic limitations of the voice or technical errors in voice production, although hormonal changes, aging, and neurological diseases are other causes. Superior laryngeal nerve paresis will impair the ability to speak loudly. This is a frequently unrecognized consequence of viral infection of the laryngeal nerves, and may be precipitated by an upper respiratory tract infection.

Even nonsingers normally require only about ten to thirty minutes to warm up the voice. Prolonged warm-up time, especially in the morning, is most often caused by reflux laryngitis, a condition in which stomach acid refluxes up the esophagus and into the throat, where it causes a chemical burn. Tickling or choking during speech or singing is often associated with laryngitis or voice abuse. Pain while vocalizing can indicate vocal fold lesions, laryngeal joint arthritis, infection, or acid reflux irritation of the arytenoids; but it is much more commonly caused by voice abuse with excessive muscular activity in the neck. In evaluating a patient with a voice complaint, the laryngologist typically will ask several questions to help better characterize the nature of the voice complaint and how it is affecting the individual's normal vocal routine.

2. What is your voice training and how do you use your voice professionally?

The amount of voice use and training also affects the voice. Inquiry into vocal habits frequently reveals correctable causes for voice difficulties. Extensive untrained speaking under adverse environmental circumstances is a common example. Such conditions occur, for example, among stock traders who speak over excessive trading room noise, sales people who talk in noisy rooms, restaurant personnel who are required to talk over the background noise of the kitchen and restaurant and in the presence of significant amounts of cigarette smoke, and people who speak over the telephone in noisy offices. The problems are aggravated by habits that impair the mechanics of voice production, such as sitting with poor posture and bending the neck to hold a telephone.
against one shoulder. Subconscious efforts to overcome these impediments often produce enough voice abuse to cause vocal fatigue, hoarseness, and even nodules (callous-like growths, usually on both vocal folds). Recognizing and eliminating the causal factors usually results in disappearance of the nodules and improved voice.

3. Do you smoke, use drugs/medications, or have any environmental exposures?
Exposure to environmental irritants is a well-recognized cause of voice dysfunction. Smoke (both primary and second-hand), dehydration, pollution, and allergens may produce hoarseness, frequent throat clearing, and vocal fatigue. These problems can generally be eliminated by environmental modification, medication, or simply breathing through the nose rather than the mouth. Unlike the mouth, the nose warms, humidifies, and filters incoming air, making it of optimal consistency to help lubricate and assist normal vocal fold vibration. Because the mouth is unable to perform these functions, the air that reaches the vocal folds when breathing occurs through the mouth usually is dry, cold, and unfiltered, which can limit lubrication of the vocal folds and make them more susceptible to tearing and hemorrhage from shear forces involved in vocal fold vibration.

The deleterious effects of tobacco smoke upon the vocal folds have been known for many years. Smoke from marijuana and other illicit drugs is even more toxic than cigarette smoke and causes more severe injury to the larynx than typically is seen with tobacco smoke. Smoking not only causes chronic irritation, but can result in alterations in the vocal fold epithelium (the cells lining the vocal fold). The epithelial cells change appearance, becoming more and more different from normal epithelial cells. Eventually, they begin to pile up on each other, rather than lining up in an orderly fashion, and can grow rapidly without restraint and invade surrounding tissues. This drastic change is called squamous cell carcinoma, or cancer of the larynx.

The use of various medications and supplements may affect the voice, too, and it is extremely important for the laryngologist to know all of the prescription and over-the-counter medications that are being taken as well as any herbal remedies, vitamins, supplements, or throat sprays that are being used, even if not on a daily basis. Some medications even may permanently ruin a voice, especially androgenic (male) hormones such as those given to women with endometriosis, or with post-menopausal sexual dysfunction. Similar problems occur with anabolic steroids (also male hormones) used illicitly by body builders. More common drugs also can have deleterious vocal effects, usually temporary. Antihistamines, which are used to treat allergies, can cause dryness, increased throat clearing and irritation, and often aggravate hoarseness. Aspirin and other anti-inflammatory pain medications (such as ibuprofen and naproxen) contribute to vocal fold hemorrhages because they decrease the ability of the blood cells to form clots, thus increasing the risk of bleeding. The propellant in inhalers used to treat asthma often produces laryngitis. Many neurological, psychological, and respiratory medications cause tremor that can be heard in the voice. Numerous other medications can cause similar problems.

4. What is your normal diet?
Some foods also may contribute to voice complaints in people with "normal" vocal folds. Milk products are particularly troublesome to some people. Milk contains casein, which increases and thickens mucosal secretions. Acidic foods such as tomatoes, lemons, grapefruits, and oranges aggravate reflux disease, as do caffeine, fried foods, fatty foods, dairy products, and alcohol. Additionally, alcohol can impair one's ability to control the voice, predisposing to vocal injury.

5. Do you have other medical problems?
The history must also assess the status of the respiratory (breathing), cardiovascular (heart and blood vessels), gastrointestinal (stomach and intestines), endocrine (both sex and nonsex hormones), neurological, musculoskeletal, and psychological systems. Disturbances in any of these areas may be responsible for voice complaints.

Problems anywhere in the body must be elicited during the medical history. Because voice function relies on complex brain and nervous system interactions, even slight neurological dysfunction may cause voice abnormalities. Additionally, voice impairment is sometimes the first symptom of serious neurological diseases such as myasthenia gravis, multiple sclerosis, Lou Gherig's disease (also known as amyotrophic lateral sclerosis or ALS), and Parkinson's disease.
6. Have you had a bodily injury?
A history of a sprained ankle may reveal the true cause of voice dysfunction, especially in a singer, actor, or speaker with great vocal demands. Proper posture is important to optimal function of the abdomen and chest. The imbalance created by standing with the weight over only one foot frequently impairs support enough to cause compensatory vocal strain, leading to hoarseness and voice fatigue. Similar imbalances may occur after other bodily injuries. These include not only injuries that involve support structures, but also problems in the head and neck, especially whiplash injuries. Naturally, a history of laryngeal trauma or surgery preceding voice dysfunction raises concerns about the anatomic integrity of the vocal fold; but a history of interference with the power source through abdominal or thoracic surgery (such as appendectomy, C-section, hysterectomy, and heart surgery) may be just as important in understanding the cause and optimal treatment of voice problems.

7. Do you have gastrointestinal (GI) problems?
Gastrointestinal disorders commonly cause voice complaints, and it is important for the treating physician to be aware of a history of such problems even if that history is remote. The sphincter (a one-way valve) between the stomach and esophagus is notoriously weak in many individuals. In reflux laryngitis, stomach acid refluxes through this weak sphincter into the throat, allowing droplets of the irritating gastric acid to come in contact with the vocal folds, and even to be aspirated into the lungs. Reflux may occur with or without a hiatal hernia. Common symptoms of reflux laryngitis are hoarseness, especially in the morning, prolonged vocal warm-up time, bad breath, sensation of a lump in the throat, chronic sore throat, cough, a dry mouth, or “coated” tongue. Heartburn is frequently absent. Over time, uncontrolled reflux may cause cancer of the esophagus and larynx; thus, this condition should be treated aggressively and conscientiously, even in the absence of significant or disabling symptoms.

8. Do you have asthma or other problems breathing?
Respiratory problems are especially problematic to singers, other voice professionals, and wind instrumentalists, but they may cause voice problems in anyone. Appropriate breath support is essential to healthy voice production. The effects of severe respiratory infection are obvious and will not be enumerated. Restrictive lung disease, such as that associated with obesity, may impair support by decreasing lung volume and respiratory efficiency. However, obstructive pulmonary disease, including asthma and chronic obstructive pulmonary disease (COPD) from smoking, are the most common culprits. Even mild obstructive lung disease can impair breath support enough to cause increased neck and tongue muscle tension as well as abusive voice patterns capable of producing vocal fold nodules. This scenario occurs even with unrecognized asthma and may be difficult to diagnose unless suspected, because many such cases of asthma are exercise induced. Vocal performance is a form of exercise, whether the performance involves singing, giving speeches, sales, or other forms of intense voice use. Individuals with this problem will have normal pulmonary function clinically and may even have normal or nearly normal pulmonary function test findings at rest. However, as the voice is used intensively, pulmonary function decreases, effectively impairing support and resulting in compensatory abusive technique. When suspected, this entity can be confirmed through a methacholine challenge test performed by a pulmonary (lung) specialist.

Treatment of the underlying pulmonary disease to restore effective support is essential to resolving the vocal problem. Treating asthma is rendered more difficult in professional voice users because of the need in some patients to avoid not only inhalers but also drugs that produce even a mild tremor, two of the most commonly forms of medications used to treat asthma. The cooperation of a skilled pulmonologist specializing in asthma and sensitive to problems of vocal performing artists is invaluable.

9. Do you have hormonal problems?
Hormones are complex, natural chemicals that the body uses to change a variety of bodily functions, including metabolism (how the body uses energy), sexual development, and psychological functioning, to name a few. Endocrine (hormone-related) problems may include thyroid abnormalities, diabetes (elevated blood sugar), other abnormalities in glucose (sugar) metabolism, pituitary (the primary endocrine gland) abnormalities, abnormalities in sex hormone levels, and abnormalities in cortisol (a natural steroid made by the body to help it
problems should be discussed with the laryngologist because of this complex interaction between hormones and the voice.

Once complex and comprehensive questioning has been completed, the physician’s visit proceeds to a physical examination, which will be reviewed in Part II of this article.

NOTE


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She founded and directed the Voice Center at the University of Illinois at Chicago upon completion of her fellowship. After a few years in Chicago, she joined the practice of Drs. Robert T. Sataloff and Karen M. Lyons in Philadelphia, where she specializes in professional voice care and other aspects of otolaryngology—head and neck surgery as they pertain to the performing artist and professional voice user. She is an active member of the academic faculties of Drexel University College of Medicine, where she currently holds the position of Associate Professor, and Thomas Jefferson University. She is the National Medical Advisor for the Voice and Speech Trainer’s Association (VASTA) and is actively involved in VASTA, The Voice Foundation, the National Association of Teachers of Singing (NATS), the Latin Academy of Recording Arts and Sciences, and the National Academy of Recording Arts and Sciences (the Grammy Foundation). She has authored or coauthored numerous publications, including award-winning journal articles, book chapters, and several books. She is a member of the Editorial Board of the *Journal of Voice*, and is an editorial reviewer for other medical journals.
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