

## Common Voice Problems

### Acid Reflux

Laryngopharyngeal reflux (LPR) is one of the most common problems involved with voice disorders. Management of LPR is critical for a healthy voice. For details on laryngopharyngeal reflux, [click here](#).

### Voice Problems related to vocal misuse and abuse

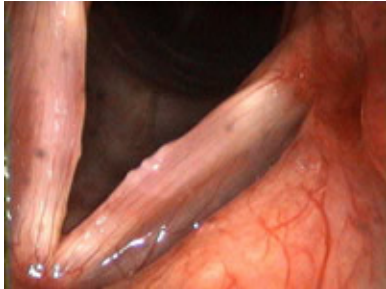
Vocal misuse is the production of voice in ways which are inefficient or involve more effort than necessary. Examples include speaking with excessive strain or tension, or with inappropriate pitch. Vocal misuse may be subtle and go unrecognized until problems arise. Vocal abuse involves habits which are clearly detrimental to the voice, such as screaming at a sporting event or using the voice excessively during a bout of viral laryngitis. Vocal misuse and abuse can lead to significant injury to the vocal folds resulting in either sudden or progressive hoarseness. Sudden hoarseness and slowly progressive hoarseness lasting more than 2 weeks require evaluation.

## Sudden Hoarseness Requiring Voice Rest

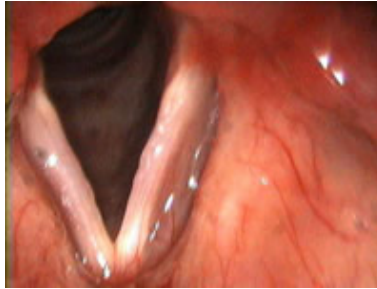
### Vocal Fold Tear

A vocal fold tear is a disruption in the mucosal lining of the vocal fold caused by acute trauma, such as a scream, talking in a loud environment, or excessive voice use during an upper respiratory tract infection. The injury is analogous to biting the inside of your lip. When identified early and with appropriate treatment, these injuries usually resolve with minimal

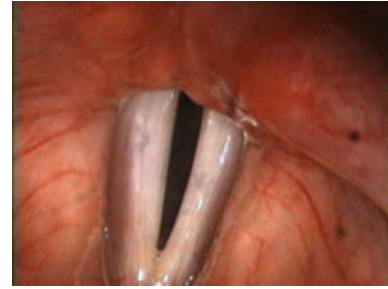
sequelae. Typically, patients are placed on voice rest for 3-5 days, occasionally are given oral steroids, and are started on voice therapy. If a patient continues to use his or her voice despite having a vocal fold tear, scarring or a vocal fold mass may result.



Acute vocal fold tear



Resolving tear after 4 days of voice rest



Tear resolved with no sequelae after 6 weeks of voice therapy

### Vocal Fold Hemorrhage

A vocal fold hemorrhage is a bleed into the substance of the vocal fold. This injury is usually caused by vocal abuse and results from a ruptured blood vessel. This is a potentially devastating injury and early diagnosis and treatment can be voice-saving. Typically, patients who have hemorrhaged are



placed on absolute voice rest for 1 week, followed by voice therapy with gradual increase in voice use under the guidance of Dr. Menaldi and Dr. Rubin for 4 – 6 more weeks. Potential complications from a vocal fold hemorrhage include development of a polyp or other mass, and scarring.

## Vocal Fold Masses

### Overview

Masses on the vocal folds interfere with vibration and closure, resulting in impaired voice quality. Some masses may develop gradually over months or years of voice misuse, while others may develop acutely, even after a single scream.

Often, there may be predisposing factors to developing masses, such as [reflux](#), [allergies](#), or [vocal fold paresis](#) which impair vocal fold function and may cause someone to be more “effortful” with his or her voice in order to make adequate sound. Such “hyperfunctional” habits result in excessive trauma to the vocal folds, contributing to the formation of masses.

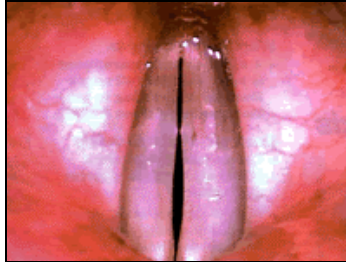
Treatment for benign masses on the vocal folds include voice therapy and, sometimes, microsurgery. Treatment plans are individualized for each patient’s problems and vocal needs. Although many masses will not resolve completely with voice therapy, a patient may learn to speak or sing with his or her mass without causing additional harm to the vocal folds. Some voices even depend on irregularities of their vocal folds to give them their “character”. Surgery may be necessary if masses do not resolve with voice therapy and are preventing a patient from satisfying his or her vocal needs. Surgery may also be needed if a vocal fold mass begins to cause harm to the other vocal fold. Surgery is meticulously performed using delicate microinstruments and high-powered microscopy.

Masses related to vocal abuse:

- [Vocal fold Nodules:](#)

Nodules are symmetric calluses on the vocal folds that occur with chronic vocal misuse

or abuse. These normally resolve with voice therapy and avoidance of abusive vocal habits.



*Nodules*

- **Vocal Fold Pseudocysts:**

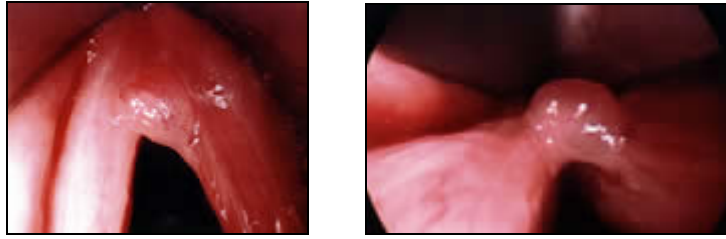
Pseudocysts are localized collections of fluid without a true cyst lining. They are typically located on the medial edge of the vocal fold. These may disappear or improve with voice therapy, however, occasionally require surgical excision.



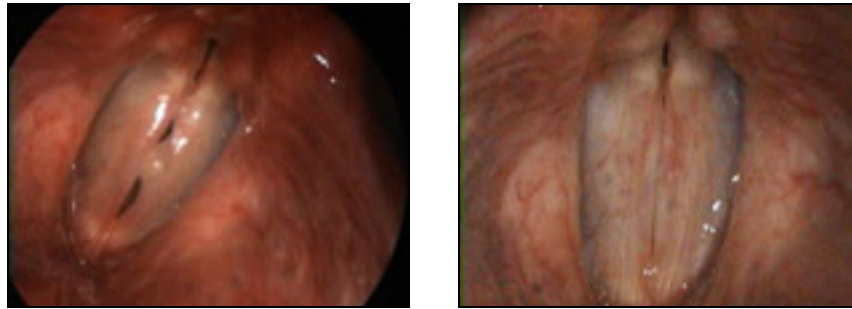
*Left vocal fold pseudocyst*

- **Vocal Fold Polyps:**

Polyps usually result from a ruptured blood vessel or hemorrhage. Occasionally, small polyps which appear like blood blisters may reabsorb with voice therapy and time. Most polyps, however, require surgical excision to restore normal voice.



*Right vocal fold polyp*



*Left vocal fold polyp preop (left) and surgically excised (right)*

- **Vocal Fold Cysts:**

Cysts are fluid-filled masses which may occur on the vocal fold edge or deep within the substance of the vocal fold. They may result from vocal fold trauma. Cysts typically will not resolve with voice therapy, and often need to be excised surgically.



*Cyst with large feeding vessel*



*Cyst on medial edge of vocal fold with feeding vessel*

- **Contact Masses:**

A contact mass forms opposite a vocal fold mass. It results from the initial vocal fold mass traumatizing the other vocal fold during voice use.



*Fibrotic contact indentation resulting from trauma from polyp on other vocal fold.*

- **Other masses**

- **Reinke's polyposis (Reinke's edema)**

This condition is characterized by gelatinous fluid within the vocal fold. It

usually involves both vocal folds, and usually is found in adults who smoke.

Occasionally it may be related to endocrine problems, such as hypothyroidism. In women, it results in a masculinization of the voice. Treatment involves smoking cessation and surgery.



*Reinke's polyposis*

- **Papillomas**

Papillomas are benign tumors of the larynx that result from infection with the Human Papilloma Virus (HPV). Mode of transmission is still not understood. Papillomas can cause voice problems and obstruct the airway. Most laryngeal papillomas are found in children, although adults may be affected as well. Standard treatment is surgical, although adjuvant therapy with injections of antiviral medication is used in select cases.



- **Leukoplakia**

Leukoplakia is a white mass on the vocal fold. It may be benign, precancerous, or cancer. Leukoplakia usually needs to be biopsied or excised to make sure it is not cancer. Further intervention depends on pathology and changes in exam.

Aggressive reflux management and attempts to stop smoking are critical in the management of leukoplakia.



- **Cancer**

Laryngeal cancer may present with voice or airway problems. Treatment depends on the type of cancer and stage. [See our Head and Neck Cancer page.](#)

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## Impaired vocal fold closure

### Vocal fold paresis:

A vocal fold paresis is a “partial paralysis” of the vocal fold resulting from an injury to one or more of the nerves to the larynx. This results in a “sluggish” vocal fold. Common symptoms of a vocal fold paresis include breathiness, vocal instability, and loss of vocal range. In addition, patients with even mild weakness to a vocal fold can develop bad, effortful vocal habits to compensate, which may cause neck and throat pain, and lead to the development of vocal fold masses. There are many possible causes of vocal fold paresis. A thorough evaluation is often warranted which may include [laryngeal electromyography](#), blood tests, and imaging studies such as a CAT scan (CT) or Magnetic Resonance Imaging (MRI).

### Vocal fold paralysis:

Vocal fold paralysis results from an injury to one or more of the nerves to the larynx. The vocal fold is completely immobile. The vocal fold may be “frozen” in different positions, resulting in different symptoms for different patients. When one vocal fold is paralyzed, this typically results in a breathy voice. Patients may develop “air hunger” and become quite fatigued after talking. One may also have an ineffective cough, and may aspirate (food and drink goes into the lungs). When both vocal folds are paralyzed, a patient’s voice may remain strong, however, the airway is often compromised. Some patients require a tracheostomy to breathe adequately.

A thorough evaluation is often warranted which may include [laryngeal electromyography](#), blood tests, and imaging studies such as a CAT scan (CT) or Magnetic Resonance Imaging (MRI).

#### [Vocal fold bowing:](#)

Bowing of the vocal folds results from atrophy or loss of tone of the vocal fold. It often results in inadequate closure resulting in a weak, breathy voice. Vocal fold bowing is often part of the aging process, but may also result from other causes, such as neurologic disease.

In most cases, treatment of bowing, paresis and paralysis are treated, at least initially, with voice therapy. If voice therapy is not sufficient, a number of surgical options exist to improve closure of the larynx.

- [Type-I thyroplasty](#): In this procedure a window is drilled out of the laryngeal cartilage and an implant is placed to push the vocal fold towards the midline.
  - [Injection laryngoplasty](#): In this procedure, an injection is performed either through a scope in the mouth from above the larynx, or directly through the neck, to push the vocal fold towards the midline. A number of injectable materials may be used. These materials differ in elastic properties and how long before they are resorbed.
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## Vocal fold scar and sulcus

Vocal fold scar may result from hemorrhage, surgery, or chronic vocal misuse and abuse. Sulcus vocalis is an invagination of the outer layer of the vocal fold resulting in a groove. Both scar and sulcus vocalis result in poor vibration of the vocal fold, resulting in hoarseness. Treatment is difficult and controversial.



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## Abnormal vocal fold movement

### Spasmodic dysphonia:

This is a focal dystonia of the vocal folds (like “writers’-cramp” of the larynx). There are 2 types “adductory” and “abductory”.

### Adductory spasmodic dysphonia:

Patients have intermittent spasms resulting in uncontrolled vocal fold closure. This produces a voice that sounds “pressed” or “strangled.”

### Abductory spasmodic dysphonia:

Patients have intermittent spasms resulting in uncontrolled opening of the vocal folds.

This produces a breathy voice quality.

Patients with spasmodic dysphonia may have some improvement with voice therapy.

Injections of botulinum toxin (Botox) into specific laryngeal muscles is the most common therapeutic option.

For more information please visit the National Spasmodic Dysphonia Association web site at: [www.nidcd.nih.gov/health/voice/spasdysp.asp](http://www.nidcd.nih.gov/health/voice/spasdysp.asp)

### Muscle tension dysphonia:

Patients may use excessive neck and laryngeal muscle tension to create voice. This causes excessive trauma on the vocal folds and impairs vibration. This disorder may be a “functional” disorder (no obvious organic cause), or may be the result of compensation for other problems, such as reflux, paresis or masses. It also can lead to the development of vocal fold masses.

### Paradoxical vocal fold movement:

In this disorder, the vocal folds come together during inspiration and move apart during expiration. This is opposite from normal physiology. As a result, these patients may have noisy breathing which may be confused with asthma. This disorder may be “functional” (no obvious organic cause), or be caused from another problem, such as neurologic disease or reflux.

Treatment for muscle tension dysphonia and paradoxical vocal fold movement is primarily voice therapy. Underlying predisposing factors are addressed.

## Masses resulting from Acid Reflux

Laryngopharyngeal reflux is one of the most common problems encountered in patients with voice problems. It may result in vocal fold swelling and reduced vibration, which may result in vocal misuse and the development of masses such as nodules and cysts. Reflux is also known to be a risk factor for the development of esophageal and laryngeal cancer.

### Granuloma

A granuloma is an inflammatory lesion that grows on or near the back of the vocal folds. These lesions may result from trauma to this area, such as those experienced after intubation. The majority of these lesions are caused by or aggravated by acid reflux.



Treatment: Granulomas are usually treated with conservative therapy including, aggressive reflux control and voice therapy. Oral steroids may be useful. Occasionally, surgical excision is required. Steroid and botulinum toxin injections may also be useful.