LARYNGOPHARYNGEAL REFLUX

You have been diagnosed with laryngopharyngeal reflux, or LPR. This condition is due to a small amount of stomach acid and enzymes making their way into your larynx, or voice box. The condition is treated with medications as well as behavior and diet changes. While LPR is not a dangerous condition, there have been reported cases of patients developing cancer from chronic reflux. The following is an information sheet to help you understand this condition.

WHO GETS LARYNGOPHARYNGEAL REFLUX, AND WHAT ARE THE SYMPTOMS?

Laryngopharyngeal reflux commonly affects women. The average age of onset is 57. While the condition is made worse with obesity, it occurs very frequently in thin, tall women. A smaller percentage of men have LPR. The most common symptom is a gravelly voice present upon awakening and continuing throughout the day. With this comes ease of losing the voice, or voice fatigability. The sensation of "a lump in the throat," or globus sensation, is also very common. This is due to hyperactivity of the muscle trying to hold the acid down in the esophagus. Finally, in response to laryngeal injury, the larynx produces a significant amount of mucus. Patients therefore often complain of significant throat clearing and the sensation of postnasal drip. Since the body cannot tell whether the "drip" is coming from the larynx or from the sinuses above, LPR is often confused with sinus symptoms or even asthma.

The above three symptoms, globus sensation, chronic throat clearing, and gravelly voice, are the most common presenting symptoms of LPR. Chronic throat pain, or the sensation of choking as well as chronic cough, may also be experienced. Heartburn is not commonly associated with LPR, and studies suggest that perhaps only 6% of patients with LPR have heartburn or gastroesophageal reflux disease (GERD).

CAUSE OF LPR

The cause of LPR is poorly understood. It is thought that an abnormality of the upper or laryngeal sphincter of the esophagus malfunctions, allowing a small amount of stomach secretions to touch the larynx and pharynx. The reflux has devastating effects, however, because the larynx and pharynx have no defense mechanisms to these substances. It is known that refluxing as little as two times per week can have significant effects on the voice. The long-term consequences of LPR include severe degradation of the voice, and even larynx cancer.

TREATMENT: MEDICATIONS

Treatment centers on inhibiting the production of acid in the stomach and eliminating certain foods and behaviors which worsen the movement of acid from the stomach into the larynx.

- Current medication protocol starts with a *proton pump inhibitor*, or *PPI* (Nexium, Prevacid, Protonix, Aciphex, Prilosec, etc.). It is essential that PPIs be taken 30-40 minutes before meals so that they may be fully absorbed into the blood stream before the first bite is taken. The preferred meal is dinnertime. If twice a day dosing is required to control symptoms, then breakfast and dinnertime are used. The proton pump inhibitor should never be taken with food. Its effect on reducing stomach acid production is lost if taken more than two hours before eating.

- The second medication used is an *H2 blocker antacid*. These are now over the counter, but prescriptions are also available. They include Zantac, Cimetidine, Pepcid AC, etc. These can be taken with or without food, allowing them to be taken before going to bed.

- The usual protocol is to take the proton pump inhibitor 30-40 minutes before dinner and the H2 blocker at bedtime. Again the H2 blocker does not require a meal to activate its effects and so can be safely taken at bedtime. The emphasis on evening (dinnertime) and bedtime dosing addresses the fact that while sleeping flat, the stomach, esophagus, and larynx are in the same plane, thus worsening reflux into the throat.

TREATMENT: DIET AND BEHAVIOR MODIFICATIONS

It is essential in the treatment of laryngopharyngeal reflux that control of behavior and diet be carried out. In fact, recent studies suggest that anti-reflux medications (PPIs, H2 blockers) will have little effect if the diet is not STRICTLY controlled. Absolutely no acidic foods should be eaten, and this includes tomatoes, all citrus fruits and their juices, vinegar dressings, etc. In addition, no caffeinated or carbonated beverages should be ingested. It is known that nicotine and alcohol relax the sphincters of the esophagus, allowing acid to reflux more easily, and therefore smoking and drinking must be eliminated. Finally, dairy products may also worsen LPR, and should be avoided.

In addition to the above diet modifications, individuals should try to eat their evening meal early and refrain from any food between dinner and bedtime. They should elevate the head of the bed by placing phone books or other bulky items between the box spring and mattress. Extra pillows will not work. Long wedge pillows may be of benefit. Patients with LPR should avoid waterbeds, because of the above problem. Elevation of the head of the bed allows gravity to help keep the stomach contents out of the throat. In addition to elevating the bed and watching the diet, patients should eliminate all vocal abuse or overuse (screaming, singing, etc.) until improved.

OUTCOMES

Because laryngopharyngeal acid reflux is caused by a problem with muscle control of the upper esophagus, treatment will improve the symptoms, but will not eliminate the reflux. This is a chronic or continuous process of healing and burning. Eventually the goal is to relieve symptoms and keep the effects of acid reflux under control with diet and medications. If diet and medications are unsuccessful, then a referral to an appropriate gastroenterologist or GI surgeon will be advocated.

Finally, while treatment will shift the balance between burning (injury) and healing (repair) of the larynx, you should be aware that treatment may take months, and symptoms usually improve slowly. To monitor your larynx, Dr. Sherman will periodically "scope" your voice box to check on the condition of the larynx. In addition, moving pictures of your larynx will also be obtained via "videostroboscopy," allowing you to appreciate the difference between the appearance of a normal larynx and your reflux-affected larynx. This will also allow Dr. Sherman to closely monitor the microscopic movement of your vocal cords. When symptoms are stable, most patients continue on their diet and medications and require yearly or bi-yearly surveillance scoping.

GERD IS NOT LPR

Please note that laryngopharyngeal acid reflux (LPR) is NOT gastroesophageal reflux disease, or GERD, and the two conditions should not be confused. *They are different entities and are treated differently*:

GERD	LPR
Heartburn and gastric upset	NO heartburn or gastric upset
Esophagitis	Rarely esophagitis
No laryngitis (unless severe)	Always posterior laryngitis
No voice changes	Always voice changes
Abnormal LOWER esophageal sphincter	Abnormal UPPER esophageal sphincter
Esophagus resistant to acid reflux	Larynx very sensitive to acid reflux
Risk of esophageal adenocarcinoma	Rare risk of esophageal adenocarcinoma
No risk of Squamous Cell carcinoma of Larynx	Positive risk of Squamous Cell carcinoma of Larynx
Heals with short course of PPI	Requires prolonged use of PPIs