**Laryngopharyngeal Reflux (LPR) Disease**

**Basic Anatomy:**

The pharynx is a hollow muscular tube that starts behind the nasal cavity and extends down up to the esophagus. Anterior to the pharynx is another tube- the larynx- made up of cartilaginous rings and muscle, which extends down up to the trachea. The pharynx and larynx have a common opening in the oral cavity serving as a route for the intake of food and passage of air, respectively. To prevent the misguided passage of a bolus of food into the airway, there is a slit-like cap, epiglottis, that closes the larynx during eating and opens it up while speaking and breathing.

**Pathophysiology:**

The underlying pathology for laryngopharyngeal reflux (LPR) disease is the same as for other reflux diseases. The incompetent lower esophageal sphincter leads to retrograde flow of stomach contents into pharynx and larynx. The stomach pH is highly acidic compared to the aerodigestive tract; the combined organs and tissues of all of the respiratory tract and the upper part of the digestive tract including the lips, mouth, tongue, nose, throat, vocal cords, and part of the esophagus and windpipe. The reflux of gastric fluid into these areas results in irritation, and ultimately inflammation with its dreadful consequences, if chronic.

**Risk Factors for LPR:**

Certain factors are known to increase the probability of LPR development and enhance disease progression,

* **Lifestyle:** Unhealthy diet, overeating, tobacco or alcohol use
* **Physical Causes:** deformed or malfunctioning esophageal sphincter, slow emptying of the stomach, overweight
* **Physiological Conditions:** pregnancy

**Signs and Symptoms:**

The clinical manifestations of LPR depend upon the severity and duration of irritation. Depending on these factors, LPR may present with:

* Hoarseness or voice problem
* Frequent need to clear the throat
* Excess mucus production or postnasal drip
* Bad breath
* Difficulty in swallowing solids, fluids or tablets
* Coughing after eating or lying down
* Breathing difficulty or choking episodes
* Chronic cough
* The sensation of a foreign body or lump in the throat

The long-term irritation of larynx may lead to:

* Chronic laryngitis
* Chronic rhinosinusitis
* Laryngeal malacia
* Laryngeal stenosis
* Laryngeal carcinoma

**Diagnosis:**

Over time, several techniques have evolved to diagnose LPR, but the primary procedure is laryngoscopy. There are two options available:

* Rigid laryngoscopy
* Flexible laryngoscopy

The flexible laryngoscope is more sensitive while rigid is more specific.

Another reflux testing method to diagnose LPR is intraluminal 24 hours pH monitoring, which detects acid and non-acid or gaseous fluid. LPR is confirmed when the total acid exposure time is (pH < 4) > 1% during 24-hour monitoring.

**Treatment:**

The most common medications used to treat LPR include:

* Antacids
* Proton pump inhibitors (PPIs)
* H2 blockers

These medicines work by decreasing stomach acid production. Lifestyle modification also plays a significant role in the management of LPR. Some common recommendations for patients with LPR are:

* Avoid sleeping immediately after having dinner. The average duration between sleep and dinner should be 3 hours.
* Avoid excessive consumption of food items that increase the risk of reflux. These include chocolate, spicy foods, citrus fruits, fried foods, and tomato-based foods.
* Smoking cessation also dramatically helps.
* Pay attention to stress management.

If all the above interventions fail, then surgery becomes inevitable. The most common surgery performed is lower esophageal sphincter strengthening.