



## **SUBGLOTTIC AND TRACHEAL STENOSIS**

Subglottic and tracheal stenosis are scarring conditions of the voice box and windpipe. The subglottis is part of the voice box and is the area just below the vocal cords where the voice box attaches to the windpipe. The trachea refers to the windpipe, which extends from the neck down to the lungs in the chest. This scarring condition narrows the space for passing air into the lungs and causes difficulty breathing.

### **Causes**

Scarring of the voice box and windpipe can result from injury due to breathing tubes placed in the windpipe, injury from burn or trauma, autoimmune conditions (body attacking itself), or unknown cause (called idiopathic). The most common cause of injury is from breathing tubes placed in the windpipe while in the hospital. This complication is relatively rare for periods shorter than 5 days, but becomes more common with prolonged use and larger tube size. Another common cause of scarring in the windpipe is the idiopathic type, which means the underlying cause of this condition is unknown. This type almost exclusively affects Caucasian middle-aged women of European descent.

### **Symptoms, Signs, Diagnosis**

Difficulty breathing and a high-pitched wheeze coming from the throat are the most common symptoms. These are made worse with increased physical activity and the condition is often misdiagnosed as adult-onset asthma for several years. Typical asthma inhalers do not improve the breathing and breathing tests looking for asthma may also miss the diagnosis early in the progression. The diagnosis is often made by an otolaryngologist (ear nose and throat specialist) or pulmonologist (lung specialist) using a small flexible camera passed through the nose down to voice box or windpipe. These procedures, called laryngoscopy and bronchoscopy, can be performed awake or under light sedation. During these procedures the narrowed area of the voice box or windpipe can be seen and often photographed. A CT scan x-ray test of the throat may also be helpful in the initial diagnosis.

### **Treatment**

Surgery is the standard treatment for scarring of the voice box and windpipe. There are many surgical options, but they can be broken down into 2 main groups: endoscopic (through the mouth) and open (through the skin in the front of the neck). Surgery quickly restores the ability to breathe normally, but scarring often returns slowly over months to years. The recurrence rate is much lower for open surgery, but open surgery also carries potential for more surgical complications.