

## Vocal Cord Dysfunction Treatment Plan

Patient Name: \_\_\_\_\_

The above named person is a patient of mine with suspected/confirmed vocal cord dysfunction (VCD). VCD is a disorder in which the vocal cords adduct, obstructing the upper airway to varying degrees, often mimicking, and sometime coexisting with, asthma.

VCD must be ruled in or out in order to successfully treat this patient. To differentiate between VCD and asthma, use the following clues:

1. VCD usually causes inspiratory dyspnea; asthma usually causes expiratory difficulty. Severe cases of either may cause both inspiratory and expiratory dyspnea.
2. Auscultation over the larynx as well as the lung fields; wheezing which is loudest over the larynx is likely to be VCD, even though it may transmit to the lung fields. Inspiratory wheezing, in the absence of expiratory wheeze, most likely indicated VCD.
3. Monitor oxygen: In VCD, oxygen saturation is normal in all but the most severe cases. If the oxygen saturation is low, draw an arterial blood gas. If the A-a gradient is elevated, this would be supportive of a diagnosis of asthma, not VCD.
4. Spirometry **with** flow/volume loops: VCD usually demonstrates a flattened or truncated inspiratory loop. Occasionally, the expiratory and inspiratory loops take on bizarrely irregular shapes. Markedly variable flow/volume loops are also indicative of VCD.
5. Direct visualization of the vocal cords when symptomatic is the gold standard in diagnosing VCD. Often the typical vocal cord adduction can be induced by exercise or forced ventilation even if the patient is not actively symptomatic.

The abnormal vocal cord adduction must be reversed in order for the patient to breathe normally, regardless of the coexistence of asthma or not. If asthma is a complicating factor, relaxing the vocal cords will allow inhaled bronchodilators to reach the lower airways. The treatment for VCD lies primarily in “relaxed throat breathing” along with “controlled breaths” (See Below). VCD does not respond to inhaled or systemic corticosteroids, so if oxygenation is normal, the exercises below should be tried before administering corticosteroids.

### “Relaxed Throat Breathing” Techniques for VCD Patients

1. Place 1 hand on the abdomen just above the belt and the other hand on the chest.
2. Relax the throat and jaw by closing lips gently, leaving the teeth open within the mouth (relaxing the jaw). Rest the tongue on the floor of the mouth. Breathe *in* slowly (controlled) through the nose. Breathe *out* slowly (controlled) through the relaxed mouth/throat while making an “S” sounds (with the tongue gently up against the palate).
3. Inhale and exhale using the abdomen/diaphragm. The abdomen should move in and out. Make sure that the chest wall does not rise and fall. (Watch the movement of the hands). Repeat until the vocal cord spasm subsides (for at least 5 repetitions).
4. If the laryngeal spasm proves too difficult to control with the above maneuvers, heliox (a mixture of 20-30% helium along with 70-80% oxygen) may be administered to improve airflow through the adducted vocal cords. This should aid in the vocal cord relaxation.

Asthma as a coexistent problem: If the patient exhibits signs of asthma as well as VCD, it is important to control the VCD as well as the asthma. Relieving the asthma may allow the patient to relax enough to control his/her VCD. Reversing the VCD should also, in kind, aid in the resolution of the patient’s asthma.