Arytenoid Adduction and Related Procedures

Arytenoid repositioning procedures such as arytenoid adduction and arytenopexy are typically used as adjunctive procedures when performing medialization laryngoplasty to address posterior glottic insufficiency.

**Historical Background**
- First described by Dr. Nobuhiko Isshiki in 1978 to close a posterior glottal gap, an arytenoid adduction (AA) simulates the lateral cricoarytenoid muscle (LCA) by rotating the arytenoid vocal process medially while pulling the muscular process anteriorly.
- Maragos and Netterville (Mayo Clinic and Vanderbilt respectively) were early adopters of this procedure in the United States and reported on their overall positive results when combined with type I thyroplasty between the years 1992-1994.
- Instead of focusing solely on the LCA’s action, Zeitels innovated a new procedure called an arytenopexy that, if done correctly, simulates the combined effects of the interarytenoid, lateral cricoarytenoid, lateral thyroarytenoid, and posterior cricoarytenoid muscles.

**Pathophysiology or Scientific Premise**
Unilateral vocal fold immobility can occasionally show a widened posterior glottal gap or a lateralized position. Medialization laryngoplasty alone can close the membranous portion of the true vocal fold but the cartilaginous portion may remain open resulting in a breathy voice if the arytenoid vocal process remains lateralized.


AA can be helpful to improve quality of life related to voice (measured by the Voice Handicap Index) in certain patients with the above vocal fold configuration when added to medialization laryngoplasty


**Indications and Contraindications**

- Historical indications for an AA or arytenopexy are a widened posterior gap and vertical height mismatch with a lateral but also a superiorly-located vocal process. The AA procedure will bring the vocal process back into its physiologic phonating position by medializing and lowering the vocal process.

- If the vocal process is inferiorly displaced, it can be elevated with an arytenopexy, along with the typical medialization.

**Treatment method**

- See these articles below for specifics on techniques.
- Arytenoid adduction
Arytenopexy


Cricothyroid subluxation is often added to an arytenopexy to lengthen the TVF.

- Zeitels SM, Desloge RB, Hillman RE, Bunting GA. Cricothyroid subluxation: a new innovation for enhancing the voice with laryngoplastic phonosurgery.

Management of common complications

- Dyspnea can occur following an AA or arytenopexy due to glottic, arytenoid, and/or pyriform sinus edema. These patients are typically observed overnight with IV steroids and an oral steroid regimen may be recommended on discharge. Tracheotomy is a risk, but occurs rarely.

- Other uncommon risks include hematoma/seroma, infection, hypopharyngeal perforation, implant extrusion (if ML is added to arytenoid procedure).