

# Medialization Thyroplasty

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## Abstract

Paralytic unilateral vocal fold immobility classically presents with inability to project the voice, decreased exercise tolerance and aspiration of saliva and ingested materials. The severity of symptoms is attributed to the position of the paralyzed vocal fold. When it is located in the midline, compensatory activity of the normal side of the larynx can often close the glottis during phonation. A lateralized position of the paralyzed vocal fold precludes adequate contact and results in a rough and breathy voice with impaired swallowing and a weak cough<sup>1</sup>. Treatment for unilateral vocal fold paralysis is designed to position static paralyzed vocal fold in a median position. Thyroplasty type-I and arytenoid adduction have provided significant improvement.<sup>2</sup>

Early surgical intervention is indicated in cases with severe aspiration. In proximal injuries to the vagus such that occurring after skull base surgery, aspiration is often present and can be life threatening and an early surgical medialization can be considered to tracheostomy<sup>3</sup>. Similarly patients undergoing intra-thoracic operative procedures for malignancy may require sacrifice of the recurrent laryngeal nerve. Post-operative vocal fold paralysis may lead to diminished cough with secretion retention, aspiration and life-endangering pneumonia. Type-I thyroplasty for vocal fold paralysis is well tolerated and is associated with improved patient outcome with no post-operative death in high-risk population<sup>4</sup>.

Patients with a low potential of recovery of vocal fold movements who have aspiration can be considered for immediate medialization. Patients without aspiration can be kept under observation. In these patients electromyography (EMG) is effective for evaluating the neural changes of

vocal fold paralysis from 6 weeks to 3 months of onset. If no innervation potentials are demonstrated on laryngeal EMG by 3 months an early surgical medialization should be considered even without aspiration<sup>2,4</sup>.

After the placement of the implant on the paretic side the contra-lateral hyper-function resolves completely. This allows for a better assessment for minor degree of vocal fold bowing. Persistence of contra-lateral vocal fold bowing after ipsilateral medialization laryngoplasty, is an indication for simultaneous contra lateral implant. Bilateral implants are useful for patients more than 60 years of age to address the age-related changes of vocal folds that compound the glottic insufficiency<sup>3</sup>. Over-medialization, which can occur if window is placed too close to anterior commissure or when a too large implant is placed, will result in a strained voice even if the posterior commissure is wide open<sup>2</sup>.

The revision rates has been reported to vary between 5.5% to 24%<sup>5,6</sup>. The revision rate will come down with experience.

## References

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