

## Clinical Application of Laryngeal Electromyography in Unilateral Vocal Fold Paralysis

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Incomplete vocal fold adduction in unilateral vocal fold paralysis (UVFP) is a common disorder that may cause glottal closure insufficiency (GCI) with hoarseness of voice and aspiration during swallowing. Laryngeal electromyography (LEMG) was introduced in 1944 by Weddel et al., and it is the only test that can provide otolaryngologists with the neuromuscular status of UVFP patients and prognosis information. According to our previous study, if patients had fibrillation (spontaneous activity) of paralyzed side thyroarytenoid (TA) muscle when keeping silence, or obviously reduced motor unit recruitment pattern during phonation. The LEMG test is positive and patients' UVFP have poor prognosis.

Since Bruening started using vocal fold injection (VFI) to treat GCI of UVFP in 1911, it has become a popular treat-

ment with various injectable materials including hyaluronic acid (HA). Because the TA muscle is the target of both LEMG and VFI, we have prospectively investigated the therapeutic application of LEMG guidance HA injection in patients with UVFP since 2010. In our preliminary reports, we have proved that LEMG-guided HA VFI is a feasible office-based technique with satisfactory short-term results. So far we have done this procedure for more than 74 patients and more than half of our patients could have long term effect after single injection. By this technique, we could treat UVFP and obtain prognostic information at the same time. This management strategy also improves the popularity of LEMG in clinical practice, and it therefore facilitates LEMG research on UVFP.