



Perceptions of Pain and Tolerability of Laryngeal Electromyography

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Introduction

Laryngeal electromyography (LEMG) is a procedure used to assess neurologic disorders of the larynx by placing needle electrodes transcutaneously into individual laryngeal muscles. As LEMG is performed in-office, periprocedural pain/discomfort experienced is of concern for patients.

In this study, we aimed to evaluate pre- and post-procedure perceptions of pain in patients undergoing laryngeal electromyography and patient tolerance of the procedure, defined as the patient’s ability to endure and complete the procedure. We hypothesized that mild to moderate levels of pain are experienced with this procedure and that all LEMGs will be completed.

Methods

Eighty adult patients scheduled for LEMG at a tertiary care laryngology practice were recruited. Consent for and description of the procedure was conducted in a standard fashion.

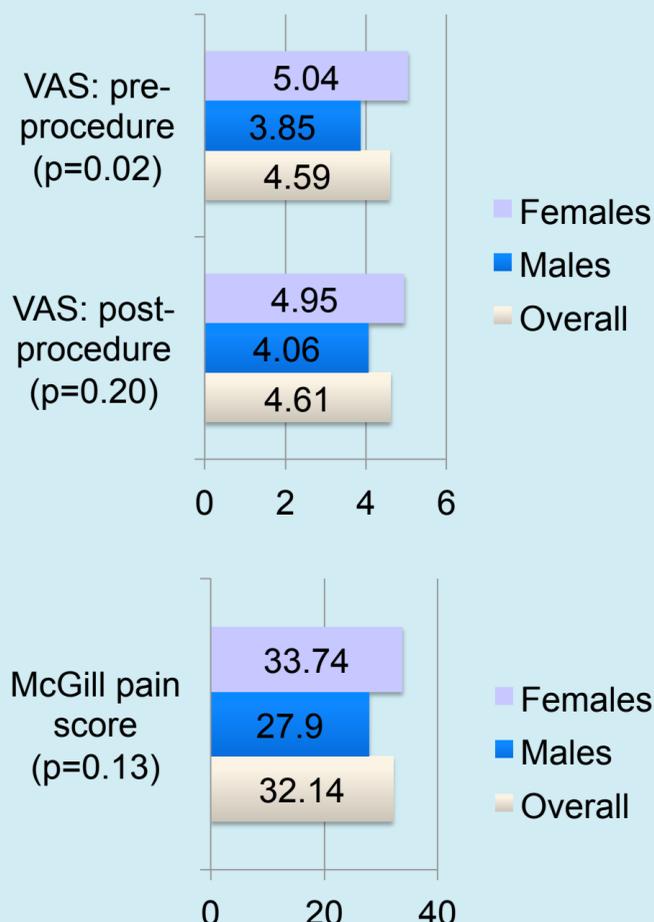
Prior to the procedure, patients completed the Voice Handicap Index-10 (VHI-10) and a 10-cm Visual Analog Scale (VAS) to rate their anticipated discomfort during the LEMG procedure (0 is no pain, 10 is the worst imaginable pain). Patients then underwent LEMG. After the procedure, patients completed the VAS to rate the pain they actually experienced, as well as the validated McGill pain questionnaire. Scores from pre- and post-procedure were compared via two-tailed paired t-test ($p < 0.05$).

Results

Table 1: Demographic data of the study population (n – 80).

Characteristics	Result
Male gender n (%)	30 (37.5%)
Age in years (mean ± SD)	48.2 ± 16.6
VHI – 10 (mean ± SD)	15.0 ± 12.4
Pro Voice User n (%)	45 (56.3%)
Previous EMG n (%)	12 (15.0%)
Psychiatric History n (%)	22 (27.5%)
Chronic Pain History n (%)	23 (28.8%)
Psychiatric/Pain meds n (%)	26 (32.5%)
VAS: pre (mean ± SD)	4.59 ± 2.34
VAS: post (mean ± SD)	4.61 ± 2.36
McGill Pain Score (mean ± SD)	32.14 ± 12.7

Figures 1 & 2. Mean results for pre- and post-procedure Visual Analogue Pain Scale (VAS), and McGill pain scores for patients undergoing laryngeal electromyography.



Discussion

With the rise of in-office procedures in Otolaryngology, the patient’s experience of pain of the procedure has become of high concern, as this can be the limiting factor in successfully completing the procedure. Our study revealed mild-moderate levels of pain experienced with LEMG. Pre-procedure VAS pain scores (4.59 ± 2.3 out of 10) were not significantly different than post-procedure VAS pain scores (4.61 ± 2.4 out of 10). Between genders, females did anticipate higher pre-procedure VAS pain scores than males did ($p=0.02$), although there was no difference for post-procedure scores ($p=0.20$). In our study, completion rate of LEMG was 100%, thus LEMG was well tolerated.

Conclusions

LEMG was well tolerated. Comparing the pre-and post-procedure pain scores revealed that patients were able to anticipate their pain levels. These results will be useful for patient education, as patients are usually apprehensive about this procedure.

References

- Sataloff RT, et al. Laryngeal electromyography: clinical application. *J Voice*. 2010. 24(2): 228-234.
- Birkent H, et al. Prospective study of voice outcomes and patient tolerance of in-office percutaneous injection laryngoplasty. *Laryngoscope*. 2013. 123: 1759-1762.
- Shah MD, et al. Office-based laryngeal procedures. *Otolaryngol Clin North Am*. 2013. 46(1): 75-84.
- Young VN, et al. Patient tolerance of awake, in-office laryngeal procedures: a multi-institutional perspective. *Laryngoscope*. 2012. 122(2): 315-321.
- Morone NE, et al. Pain as the 5th vital sign: exposing the vital need for pain education. *Clin Ther*. 2013. 35(11): 1728–1732.