

CASE SERIES AND REPORTS

# Injection laryngoplasty through a transoral approach using the Guedel oral airway

## *La laringoplastica iniettiva mediante approccio transorale con l'utilizzo della cannula di Guedel*

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### SUMMARY

Injection laryngoplasty has gained popularity as a treatment modality for glottal insufficiency. Several approaches have been described, specifically transcutaneous, transoral and transnasal. The authors describe a novel technique performed successfully on three subjects, namely endoscopic injection laryngoplasty using the modified Guedel oral airway. There was marked improvement in dysphonia, maximum phonation time and closed quotient in all three subjects with a decrease in the Voice Handicap Index-10 score. This new approach is a viable approach for the treatment of glottal insufficiency.

KEY WORDS: Glottic insufficiency • Laryngoplasty • Endoscopy

### RIASSUNTO

*Le laringoplastiche iniettive hanno ottenuto notevole popolarità come modalità di trattamento per l'insufficienza glottica. Numerosi approcci sono stati descritti: transcutaneo, transorale, transnasale. Gli autori descrivono una nuova tecnica, eseguita con successo in tre pazienti: la laringoplastica iniettiva endoscopica con l'utilizzo la cannula di Guedel modificata. C'è stato un marcato miglioramento della disfonia, del tempo massimo fonatorio e del quoziente di chiusura glottica, insieme ad un decremento del Voice-Handicap Index-10 score. Questo nuovo valido approccio è praticabile per il trattamento dell'insufficienza glottica.*

PAROLE CHIAVE: *Insufficienza glottica • laringoplastica • Endoscopia*

## Introduction

Injection laryngoplasty has gained popularity among otolaryngologists as a treatment modality for glottic insufficiency. The main approaches are the transcutaneous, transoral and transnasal. The transoral approach is primarily limited by the presence of hyperactive gag reflex and/or inadequate oral opening, whereas the transcutaneous approach is limited by unfavourable neck anatomy. In both approaches two routes are used, one for visualising the larynx and the other for introducing the injecting needle. In addition, there is a need for an experienced assistant to perform the flexible endoscopy<sup>1,2</sup>. On the other hand, transnasal injection laryngoplasty as described by Ricci Maccarini A et al. is a safe procedure with limited discomfort to the patient<sup>3</sup>. Nevertheless, it has limited application in cases of a narrow nasal passage, especially in patients who are on anticoagulants<sup>3</sup>.

The authors of this manuscript describe a novel approach, namely fibre optic endoscopic injection laryngoplasty through the transoral approach using the modified Guedel oral airway<sup>4</sup> (Fig. 1). This approach can be used as alternative to the aforementioned conventional approaches. This investigation was exempted from the Institutional

Review Board Approval. While the patient was seated in the examination room, the oral cavity, oropharynx and larynx were anaesthetised by applying xylocaine spray and gel to the dorsum of the tongue, following which the modified Guedel oral airway was inserted. The fibre optic scope with working channel (Ref 11001UD1 by Karl Storz) was then gently introduced thru the oral airway until the laryngeal structures were visualised (Fig. 2). Similar to the transnasal approach, once the fibre optic scope was in place, a 19 gauge fibre optic needle (Endoline Securline – BTC Medical Europe S.R.L., made in Italy) was then introduced through the working channel of the endoscope and its blunted tip was used to palpate the posterolateral and mid aspect of the vocal cord to ensure complete anaesthesia. The needle was then engaged at the desired injection site and filling material was injected until voice quality was satisfactory. The scope is usually handled with the right hand and the injecting needle in the left hand. The syringe containing the filling materiel can be either pressed by the surgeon or by the assistant. Patients were instructed to resume oral intake one hour after the procedure to avoid risk of aspiration. Pooling of secretions in the larynx was reduced by administering in-