

# Using an intubating bougie as a guide for flexible biopsy forceps in laryngoscopy

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## Abstract

**Key points** Laryngoscopy is performed to diagnose and treat diseases of the hypopharynx and larynx Adequate exposure is essential for the procedure and can be limited by a short neck, limited neck extension and other patient factors When standard laryngoscopy biopsy forceps cannot access an area of the pharynx, then flexible pulmonary or gastric biopsy forceps can be used The flexible biopsy forceps can be loaded down a cut intubating bougie to access difficult areas This correspondence explains how to perform this technique and outlines the efficacy

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Correspondence: Our experience

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The flexible biopsy forceps can be loaded down a cut intubating bougie to access difficult areas

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## Introduction

Laryngoscopy is the gold standard for the assessment of the larynx while preserving airway, speech and swallowing ability. Direct and micro-laryngoscopy are performed to diagnose, stage and treat lesions of the hypopharynx and larynx for benign and malignant lesions and for phono-microsurgery (1).

Good exposure, visualisation and access of the larynx are essential for the procedure. In some patients it can be difficult to visualise and access the whole larynx. In this situation, inadequate laryngeal exposure could result in misdiagnosis, incomplete removal of lesions or inadvertent injury to the vocal cords (2). Patient factors causing difficult exposure include a short neck, macroglossia, retrognathia, obesity or extension limitation of the cervical spine.

**Objectives:** This technical note outlines how an intubating bougie can be used as a guide for flexible biopsy forceps in these difficult cases, to obtain biopsy samples. The Eschmann tracheal tube introducer (also known as the gum elastic bougie) is a 60cm long, 15 French gauge flexible plastic device with a central lumen and a J angle at the distal tip (see figure 1) (3). It can be shaped as required.

## Method

This paper follows the SQUIRE 2.0 guidelines (Revised Standards for Quality Improvement Reporting Excellence) (4).

Other papers outlining the use of a boogie as a guide were searched for for using

MEDLINE and EMBASE using the search terms; “laryngoscopy; biopsy; exposure; bougie”. No other papers were found explaining this technique.

The patients were positioned with the neck flexed and head extended. The laryngoscope was inserted. The operator could then direct a 30 degree Hopkins rod, or attach the laryngoscope handle to the suspension arm if microlaryngoscopy was required.

If an area of the hypopharynx or larynx is difficult to access with the standard biopsy forceps available on the laryngoscopy set, then a flexible 2.0mm gauge, 100cm pulmonary biopsy forceps, with a 1.8mm jaw, can be used. (figure 2). The distal tip of the bougie is cut to expose the lumen. The assistant then loads the flexible biopsy forceps down the bougie lumen, which can be manipulated into position to access the difficult area (figure 3). The lesion is approached with an open jaw biopsy forceps, pushed deep into the lesion and closed, feeling for resistance. The biopsy forcep handle is controlled by the assistant, whilst the operator holds the Hopkins rod and laryngoscope; or in microlaryngoscopy, the bougie can be further guided by the operator.

## Results

In cases where laryngeal exposure was difficult and the method outlined above was utilised 100% had adequate tissue samples to achieve histological diagnosis.

## Discussion

Although angled telescopes and curved instrumentation may help overcome challenges of difficult laryngeal access, we found that the flexible biopsy forceps loaded down the lumen of a bougie is a useful adjunct for more challenging cases. They are also readily available in most hospitals. When using the flexible biopsy forceps alone, it was found that there was not enough rigidity and guidance and the jaws often missed the lesion. The bougie technique offers the rigidity needed and as the plastic has memory, it will stay in the position required to access difficult areas to obtain adequate samples needed for histological diagnosis.

## Conclusion

In cases where it is difficult to obtain biopsies due to limited exposure of the larynx, flexible biopsy forceps loaded into the lumen of an intubating bougie lends itself as a useful adjunct, and is easily accessible in most hospitals.

## Figure list

Figure 1: Image of intubating bougie

Figure 2: Image of flexible biopsy forceps

Figure 3: Image of loaded bougie with flexible biopsy forceps showing the tips

**Word count** : 671

## References

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