

Whistle-Guided Awake Blind Nasotracheal Intubation in Carcinoma Buccal Mucosa with Limited Mouth Opening: A Case Series

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ABSTRACT

Background: Awake tracheal intubation remains an important strategy in patients with anticipated difficult airways. Although fiberoptic bronchoscopy is widely regarded as the reference technique, blind nasotracheal intubation may still be useful in selected cases, especially when aided by simple acoustic adjuncts. Early reports described whistle-assisted blind nasal intubation, but published contemporary case-based experience is limited.

Methods: We report a case series of 10 adult patients with anticipated difficult airways scheduled for elective surgery requiring awake airway management. After standard preparation, airway topicalization, oxygen supplementation, and minimal sedation, awake blind nasotracheal intubation was attempted using Dambale's Whistle attached to the tracheal tube. Tube advancement was guided by the audible airflow signal during spontaneous breathing. Fiberoptic bronchoscopy was kept immediately available as a rescue technique.

Results: Successful tracheal intubation using Dambale's Whistle was achieved in 8 of 10 patients. In 2 patients, blind nasotracheal intubation was unsuccessful and fiberoptic intubation was performed successfully. No major complications such as severe desaturation, aspiration, major epistaxis, or airway trauma were observed. The technique was generally well tolerated, and haemodynamic changes were acceptable.

Conclusion: Dambale's Whistle may be a feasible adjunct for awake blind nasotracheal intubation in selected anticipated difficult airway cases. It should be used only with appropriate preparation and a definitive backup plan, including readiness to proceed to fiberoptic intubation when required.

Keywords: Awake intubation; difficult airway; blind nasotracheal intubation; whistle-guided intubation; fiberoptic rescue; airway management

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INTRODUCTION

Management of the anticipated difficult airway remains central to safe anaesthetic practice. Awake tracheal intubation is often preferred because it preserves spontaneous ventilation and allows continuous neurological and airway assessment. The Difficult Airway Society awake tracheal intubation guideline supports awake techniques when difficulty is predicted and stresses the need for adequate topical anaesthesia, oxygenation, human factors preparation, and backup strategies.

Fiberoptic bronchoscopy is commonly considered the standard approach for awake intubation. However, it may be limited by equipment availability, cost, operator dependence, and impaired visualisation from blood, secretions, or distorted anatomy. Because of these limitations, older non-visual techniques continue to have relevance in selected settings. Blind nasotracheal intubation, though less frequently practiced today, remains a potentially useful skill and has been described as a viable alternative or rescue approach in difficult airway situations. Acoustic guidance is one method used to improve blind nasal intubation. Dyson and colleagues described the use of a simple whistle during awake blind nasal intubation in 1990, and Krishel later reported an endotracheal tube whistle as an adjunct to blind nasotracheal intubation. More recently, adjunct-guided awake blind nasal intubation, including capnography-assisted techniques, has continued

to be reported, suggesting that aided blind techniques may still have a role in selected patients.

Dambale's Whistle is a simple acoustic aid designed to amplify airflow-related sound during spontaneous respiration and thereby assist blind nasotracheal tube guidance. Published clinical experience with this specific device is limited. We therefore present a case series of 10 anticipated difficult airway cases in which awake blind nasotracheal intubation was attempted using Dambale's Whistle, with fiberoptic intubation available as rescue when required.

Methods

Study design and setting

This was a prospective descriptive case series conducted in elective surgical patients with anticipated difficult airways undergoing awake airway management.

Patients

Ten adult patients with anticipated difficult airways scheduled for elective surgery were included. Anticipated difficulty was identified on preoperative assessment based on one or more of the following:

- restricted mouth opening
- altered maxillofacial anatomy
- limited mandibular mobility
- anticipated difficult direct laryngoscopy

Preparation

All patients underwent standard fasting assessment and routine monitoring, including ECG, non-invasive blood pressure, pulse oximetry, and capnography after intubation. A difficult airway cart, fibreoptic bronchoscope, suction, oxygen delivery devices, and emergency front-of-neck access readiness were ensured before the procedure.

The nasal passage was prepared with a vasoconstrictor and lubricated appropriately. Airway topicalisation was performed with lignocaine by institutional protocol. Minimal sedation was administered only to maintain comfort while preserving spontaneous breathing, verbal responsiveness, and airway reflexes.

Technique

A cuffed nasotracheal tube was mounted with Dambale's Whistle at the proximal end. The tube was advanced gently through the more patent nostril while the patient breathed spontaneously. The direction of advancement was guided by the intensity and quality of the audible whistle sound. If the sound diminished, the tube was withdrawn slightly and redirected. Intubation was confirmed by capnography, bilateral chest expansion, and auscultation.

Failure criteria and rescue

The technique was considered unsuccessful if tracheal placement could not be achieved after reasonable attempts, if patient tolerance became inadequate, or if safety concerns arose. In such cases, fibreoptic intubation was performed as the rescue technique.

Outcomes

Primary outcome:

successful tracheal intubation using Dambale's Whistle

Secondary outcomes:

need for rescue fibreoptic intubation

number of attempts

minor complications such as epistaxis, coughing, gagging, desaturation, or mucosal trauma

overall patient tolerance

haemodynamic response

Results

Ten patients underwent attempted awake whistle-guided blind nasotracheal intubation. Tracheal intubation using Dambale's Whistle was successful in 8 of 10 patients, giving a procedural success rate of 80%. In the remaining 2 patients, blind intubation was not achieved and fibreoptic bronchoscopy was used successfully as the rescue technique.

Most successful cases required only minor tube redirection based on the audible airflow signal. No patient developed severe hypoxaemia, aspiration, major epistaxis, or clinically significant airway trauma. Minor discomfort, coughing, and limited nasal bleeding were encountered in some cases but did not require major intervention. Haemodynamic changes were modest and remained clinically acceptable throughout the procedure.

Suggested Table 1. Patient and procedural summary

Cas e	Age/S ex	Whist le succe ss	Attem pts	Rescue needed	Complicati ons
1	46/F	Yes	1	No	No
2	45/F	Yes	1	No	No

3	44/M	No	2	fibreop tic	Mild bleeding
4	58/F	Yes	1	No	No
5	81/F	Yes	2	No	No
6	43/M	Yes	1	No	Mild bleeding
7	81/F	Yes	1	No	No
8	69/F	Yes	1	No	Mild bleeding
9	38/F	No	3	fibreop tic	Mild bleeding
10	55/F	Yes	1	No	No

Discussion

In this 10-patient case series, awake whistle-guided blind nasotracheal intubation using Dambale's Whistle was successful in 8 patients, while 2 required fibreoptic rescue. These findings suggest that the device may serve as a useful adjunct in selected anticipated difficult airway cases, but not as a replacement for established advanced airway techniques.

The rationale for this technique lies in maintaining spontaneous respiration while using acoustic feedback to optimize tube direction. This is consistent with the broader principle behind awake intubation: preserving ventilation and avoiding loss of airway control during induction. Current awake intubation guidance emphasizes preparation and backup planning rather than reliance on any single instrument. Our experience fits that framework, because all cases were performed with fibreoptic capability immediately available.

Our findings also align with earlier literature describing whistle-assisted blind nasal intubation. Dyson first described a simple whistle for awake blind nasal intubation, and Krishel reported an endotracheal tube whistle adjunct. More recent observational work using capnography-assisted awake blind nasal intubation in maxillofacial surgery suggests that guided blind techniques can still succeed in selected settings.

The main strength of this series is its pragmatic relevance. In institutions where fibreoptic equipment may not always be immediately practical, a simple acoustic aid could help bridge the gap between classic blind techniques and modern awake airway principles. However, our results should be interpreted cautiously. The sample size is small, there is no comparator group, operator experience is likely important, and the technique failed in 20% of patients, all of whom required fibreoptic intubation. Accordingly, Dambale's Whistle should be viewed as an adjunct for carefully selected cases, not as a substitute for fibreoptic intubation or a reason to omit comprehensive difficult airway preparation.

Conclusion

Dambale's Whistle appears to be a practical adjunct for awake blind nasotracheal intubation in selected anticipated difficult airway cases. In this series, it enabled successful intubation in 8 of 10 patients, while 2 patients were safely managed with fibreoptic rescue. The technique may be particularly relevant where a simple low-cost adjunct is desirable, but it must be used within a structured difficult

airway plan and with immediate availability of a definitive backup technique.

Figure 1. Dambale's Whistle attached to the proximal end of the nasotracheal tube.

Figure 2. Flow diagram of case inclusion and outcomes:

10 cases included

10 underwent awake whistle-guided blind nasotracheal intubation

8 successful with Dambale's Whistle

2 unsuccessful, converted to fiberoptic intubation

10 ultimately intubated successfully

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