

A disposable flexible intubation videoscope, the Ambu® aScope™, and the first experiences with awake intubation in patients with difficult airways

Michael S. Kristensen, MD², Birgitte B. Fredensborg, MD², Christian M. Hansen, MD¹ and Michael F. Tvede, MD¹

²Department of Anaesthesia and Operating Theatre Services 4231, Centre of Head and Orthopaedics, Copenhagen University Hospital, Rigshospitalet, Denmark and ¹Department of Anaesthesia and Intensive Care, Herlev Hospital, Denmark. E-mail: michael.seltz.kristensen@rh.regionh.dk

Introduction

The Ambu® aScope™ is a disposable flexible videoscope for endotracheal (ET) intubation. It has a camera at the tip of the 5.3mm wide and 63 cm long insertion cord and accommodates a 6.0mm tube. The aScope™ has a channel for injection of local anesthetics but no suction-channel. During the endoscopy the scope is connected to a reusable 6.5" color TFT 640*480 LCD monitor (photo). The aScope™ is introduced in our armamentarium for management of the difficult airway as an equivalent to our non-disposable fiberscopes and flexible video-scopes. The patients were all selected following standard departmental procedure, ie intubated awake if a difficult mask-ventilation or ET intubation was predicted. We present retrospective case-reports of the first five patients with difficult airways intubated with this device.



Case reports

Patient 1. Male, 59 yrs, with a tumor of the hard palate. Mallampati class (MC) 3, limited neck-extension and inability to prognath. The patient received glycopyrrolate 0.2mg and light sedation with 2mg midazolam and infusion of remifentanyl 0,08µg/kg/min, spontaneous ventilation was maintained and the patient was fully cooperative during the procedure. Local anesthesia (LA) using lidocaine 10% was administered by spray application to the mouth and subsequently "spray-as-you-go" injection of lidocaine 4% via the injection port of the aScope™. The patient was intubated orally with an 8.0mm internal diameter (i.d.) ET-tube (ETT) slid over the insertion cord of an aScope™ via a Berman™ airway. After intubation direct laryngoscopy revealed a Cormack-Lehane (CL) grade 4 (no part of epiglottis visible).

Patient 2. Male, 68 yrs, with oral cancer. Three weeks previously anesthetized were difficulty with mask-ventilation was experienced and direct laryngoscopy had revealed a CL grade 3. Following light sedation and LA as in case 1, he was intubated orally awake with a 7.0mm i.d. ETT over the aScope™.

Patient 3. Male, 60 yrs, suspected oropharyngeal cancer. MC 3, severely decreased neck extension and thyromental distance of 6cm. The patient received light sedation and LA as in case 1. He had copious secretions and suctioning was applied via a suction catheter before intubation. The patient was intubated orally with a 6.0mm i.d. ETT over the aScope™. Following intubation and induction of general anesthesia, accidental extubation was performed by the surgeon. Mask ventilation proved impossible, direct laryngoscopy revealed CL grade 3 and re-intubation was performed "blindly" with great difficulty. Three weeks later the patient underwent another uncomplicated awake aScope™-intubation.

Patient 4. Patient with an intra-thoracic goiter severely compressing the trachea. Following light sedation and LA as in case 1 he was intubated awake with the aScope™ thus allowing the tip of the tube to be positioned distally to the tracheal compression.

Patient 5. Patient with MC 3, inter-incisor distance 2.7cm and inability to prognath. Intubated orally awake (6.0mm i.d. ETT) with the aScope™ by a first year resident after light sedation and LA. Subsequent direct laryngoscopy revealed a CL grade 3.

Discussion

The availability of a disposable flexible optical scope has several possible advantages for the anesthesiologist: No cumbersome cleaning, no repair costs, avoidance of the small, but existing, risk of cross-contamination¹ and the possibility of always having access to a flexible scope, which is not the case with the expensive reusable scopes². However, it is mandatory that the clinical performance of a disposable flexible scope is so good that it can be used for managing patients presenting with severely difficult airways

Conclusion

The first disposable flexible intubation videoscope, the Ambu® aScope™, was successfully used for awake intubation in six cases in five patients with severely difficult airways and seems to offer a valuable supplement, or maybe even alternative, to the existing flexible fiber- and video-scopes.

1 Mehta AC et al. American College of Chest Physicians and American Association for Bronchology Consensus statement. CHEST 2005;128:1742-1755

2 Kristensen MS, Møller J. Airway management behavior, experience and knowledge among Danish anaesthesiologists--room for improvement. Acta Anaesthesiol Scand. 2001;45(9):1181-5