
The use of the Ambu intubation SGA, Aura-i, in difficult airways

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This document reports 3 cases in which the intubation SGA, Ambu Aura-i, was used in difficult airways. The first case is a 7 years-old girl, weighing 30 kg, who had previous history of difficult airway. The 2 other cases are adult patients in whom Aura-i was also used to intubate. This reports illustrate the potential of intubating SGA to deal with predicted and unpredicted difficult airways.

Infant with a predicted difficult airway

The patient was a 7 years-old girl, who suffered from a very seldom disease which caused her to have extreme stiffness of the neck, little mouth opening due to a stiffness in the jaw. She had been intubated at Rigshospitalets ENT Department before but it had been very difficult. The anaesthesiologists knew that it was possible to ventilate her. She was therefore inhaled to sleep with Sevoflurane (gas anesthesia) and kept on spontaneous ventilation.

A size 3 Aura-i was successfully inserted and after placement of the laryngeal mask there was a free airway with a sufficient CO₂ curve and saturation was 100%.

A wiretube size 5.0 was inserted through the Aura-i and placed just outside the airway tube of Aura-i (in the hypopharynx). The cuff of the ET tube was inflated and the circle system was connected to the wiretube, still with a free airway. Sufficient CO₂ curve and 100% saturation were obtained.

A fiber-optic scope was inserted through the wiretube and provided a clear that there was a view of the epiglottis. The doctor made a gentle jaw lift (her jaw was very stiff). (A size 3 was probably a little too big and the jaw lift might not have been necessary with a Aura-i size 2,5). When going through the Aura-i there was a full optical view and the fiber-optic was inserted till just above the carina. The wire tube was railroaded over the fiber-optic and the child was successfully intubated.

The cuff of Aura-i was deflated and Aura-i was removed by using another ET tube size 5.0. After removal a second look with the fiber optic was done to verify the correct positioning of the ET tube. The procedure was documented in the patients journal.

The reasons why this procedure was chosen to this patient were:

- an awake flexible optical intubation was not possible due to the age of the child. It was evaluated that cooperation with the child during an awake procedure would not be possible.
- the Aura-i could be inserted while the patient was asleep but still breathing spontaneously

Male patient with a difficult airway

A male patient with a very difficult airway was, due to his anatomy, scheduled for an awake fiber optic intubation. The anesthesiologist in charge initiated the case with a low dose of anesthesia and analgesia

and good local anesthesia. When the optical scope was entering the pharynx, the anesthesiologist lost track of his landmarks and was not able to identify trachea or any other landmarks in the larynx. Therefore he called for assistance and soon after 3 anesthesiologists and 2 anesthetic nurses were attending the case. The 2nd and more skilled anesthesiologist took over a scope but was not able to identify any of the landmarks. The patient had to this point stopped breathing because of the anesthesia and analgesia given. His oxygenation was decreasing and one of the anesthesiologist requested an Ambu Aura-i.

Once the Ambu Aura-i was inserted into the patient a flexible optical scope was railroaded via the airway tube of Aura-i. All anatomical landmarks became visual and as soon as the epiglottic, vocal cords and trachea were identified the patient was successfully intubated.

59 years-old patient with a difficult airway scheduled for cholecystoscopy

A 59 year old woman was scheduled for a cholecystoscopy. The plan was to intubate her using direct laryngoscopy, she was a Mallampati I or II and didn't have any other signs of a difficult airway besides a BMI of 37,5 (weighing 104, height 167).

After induction of anesthesia and analgesia direct laryngoscopy was performed but it was difficult to get a good view of epiglottis, and at 2nd attempt there was blood and other secretion plus edema in the hypopharynx and around the laryngeal inlet, which only made everything more difficult. The patient was then ventilated with a facemask and a oral airway and it was decided to try with an Aura-i and the aScope. The Aura-i size 4 was easily inserted and the patient could be ventilated via the device. An ET tube was railroaded over the aScope and the scope was inserted through the airway of Aura-i. Once the aScope reached the navigation mark the scope was bended upwards and a full view of the epiglottis and vocal cords appeared.

The patient was easily intubated and the surgical procedure could begin.

During a cholecystoscopy it is important that a gastric tube is placed in the esophagus, because air is inflated into the abdominal cavity, and this increases the pressure against the stomach which increases the risk of aspiration. Therefore the surgeon will like to ensure that the stomach is empty, and if the pressure is too high the abdominal content can escape via the gastric tube.

The anesthesiologist didn't want to remove the Aura-i with a risk losing the airway. He decided to place the gastric tube with Aura-i still inserted. Therefore the cuff of Aura-i was deflated and the anesthesiologist was able to pass a thick gastric tube behind the Aura-i easily.

After placement of the gastric tube an adrenal cortex was given to decrease the edema of the pharynx. Once the procedure was over an exchange catheter was inserted via the ET tube and the patient was extubated from the trachea with the Aura-i still in place. When sufficient respiration returned the Aura-i was removed and the patient was transferred to the post operative recovery unit with the exchange catheter in place. The next day the patient was withdrawn from the hospital feeling great:)

These cases describe 3 situations in which Aura-i (and aScope) were used as intubation aids in predicted and unpredicted difficult airways.

More and more experts recommend a maximum of 2 intubation attempts with direct laryngoscopy. If intubation is not successful after 2nd attempt the clinicians could place an intubation supraglottic airway, such as Aura-i to ensure ventilation. Then, the supraglottic airway could be used as an intubation conduit.

When following the ASA Airway Algorithm the recommendation is a maximum of 3 intubation attempts, and if this does not succeed, to place a supraglottic airway and use it as an intubation conduit. The reason for not trying more times with a laryngoscope is because it can damage the mucosa and provoke swelling. Mucosa swelling can create a difficult situation in which it will not be possible to place a supraglottic airway.