Letters to the Editor

Pentax-AWS (Airway Scope®) for awake tracheal intubation

To the Editor:

Patients with blunt facial trauma often require emergent tracheal intubation. Intubation is often difficult because of swollen tissues, poor visualization of the glottis, and distorted airway anatomy. Furthermore, application of manual, in-line neck stabilization during intubation may seriously degrade the laryngeal view achieved with direct laryngoscopy [1].

The Pentax-AWS (Airway Scope®) video display unit (AWS; Pentax, Tokyo, Japan), used in combination with the disposable blade (Pblade®, Pentax), is a novel tracheal intubation device that allows indirect visualization of the vocal cords through a built-in color, liquid crystal display (LCD) monitor. The Pblade is designed to be passed over the dorsum of the tongue, with minimal displacement of the tongue and other soft tissues [2]. The AWS can be successfully used in patients with a difficult airway [3].

We used the AWS for awake intubation in a 47-year-old woman who had maxillofacial injuries after a car accident. On arrival in our emergency room, her vital signs were as follows: Glasgow coma scale score, 10 (E3V2M5); blood pressure, 110/80 mmHg; heart rate, 88 bpm; respiratory rate, 30 breaths/min, and oxygen saturation, 96% to 98%, with oxygen administered via nonrebreathing face mask. The patient’s neck was stabilized in the neutral position with a cervical collar. Her blood ethanol concentration was 2.8 mg/dL. Her blood also tested positive for benzodiazepine.

The patient was at risk of pulmonary aspiration of blood due to bleeding in the oral cavity and a moderate reduction in consciousness. Endotracheal intubation with the conventional Macintosh blade (Gyrus ACMI, Southborough, MA, USA) and topical anesthesia was attempted. After removal of the cervical collar, the patient’s neck was kept in the neutral position with manual in-line neck stabilization. However, only the epiglottis could be seen. In addition, the patient was uncooperative, and she became agitated, with an active gag reflex as the blade was advanced.

We then tried the AWS (Fig. 1). The endotracheal tube (ETT) placed in the right channel of the Pblade was connected to the breathing circuit via a Bodai suction safe swivel Y connector (Sontec Medical Inc., Hingham, MA). Oxygen at 10 L/min was administered to prevent desaturation during the procedure. Excessive blood and secretions in the oropharynx were effectively removed under vision with a 14F suction catheter inserted through

![Diagram of AWS setup](image)

*Fig. 1* Airway Scope® (Pentax-AWS, Pentax, Tokyo, Japan), with attached accessories for awake intubation. The endotracheal tube (ETT) was set in the tube channel in the right side of the disposable blade (Pblade). The proximal tip was connected to the breathing circuit via Bodai suction safe swivel Y connector (Sontec Medical Inc., Hingham, MA) to administer oxygen at 10 L/min. A 14F suction catheter was inserted into the ETT via Bodai connector, which was slit to remove excessive blood and secretions under vision. * = original suction channel, which allows insertion of the suction catheter smaller than 12F in diameter. We used this channel for topical anesthesia (TA) route with a tracheal spray tube. TA cath = catheter tip for topical anesthesia; TA syringe = syringe for topical anesthesia.
the ETT. Additional topical anesthesia was applied through a tracheal spray tube (Hakko, Tokyo, Japan) passed through the dedicated “suction channel” of the Pblade. Visualization of the patient’s vocal cords was achieved easily, the percentage of glottic opening score being 80%, which is equivalent to Cormack-Lehane grade 1. After topical anesthesia was sprayed on the vocal cords, the patient’s trachea was intubated uneventfully on the first attempt with the AWS.

The AWS has advantages for awake intubation over the conventional Macintosh laryngoscope. When cervical stabilization is applied, the laryngeal view is known to be worsened, and tracheal intubation becomes more difficult with the Macintosh blade [1,4]. In clinical practice, this situation results in use of blind techniques with the Macintosh laryngoscope, heightening the risk of intubation failure and airway trauma. The AWS has an anatomically shaped blade with a charge-coupled device (CCD) camera on the tip, which allows for easy visualization of the glottis during intubation of a patient whose neck is placed in the neutral position. The procedure is well tolerated because only minimal lifting force is needed to expose the glottis.

At present, the Bullard laryngoscope (Welch Allyn, Skaneateles Falls, NY, USA) is probably the laryngoscope of choice in patients requiring tracheal intubation with manual in-line stabilization; it produces the best view and takes the least time [5]. However, the AWS has some advantages over the Bullard laryngoscope. The laryngeal view can be observed with the built-in 2.4-in (6.1-cm) color LCD monitor not only by the operator but also by an assistant. The assistant was able to perform suction and topical anesthesia with direct vision. Use of a standard suction catheter via Bodai connector provides much more effective suction than do the narrow suction channels of the Bullard laryngoscope or fiberoptic bronchoscope. Delivery of oxygen via ETT in the channel maintained the patient’s oxygen saturation and prevented fogging of the lens. There is no need to remove a stylet after intubation, and oxygen saturation and prevented fogging of the lens. There is no need to remove a stylet after intubation, and oxygen saturation and prevented fogging of the lens. There is no need to remove a stylet after intubation, and oxygen saturation and prevented fogging of the lens. There is no need to remove a stylet after intubation, and oxygen saturation and prevented fogging of the lens.

The AWS may be the device of choice for tracheal intubation in a patient requiring a neutral neck position because of facial trauma.

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References


RE: Anesthesia awareness: an analysis of its incidence, the risk factors involved, and prevention

To the Editor:

This letter concerns the informative and stimulating article published recently in the Journal of Clinical Anesthesia entitled “Anesthesia awareness: an analysis of its incidence, the risk factors involved, and prevention” [1]. Operative anesthesia has seen significant development since its first appearance in the mid-1800s. With research and practice modifications, there has been the ever-changing ability to perfect the practice of anesthesia. However, as pointed out in the article, the event of anesthesia awareness is ever so prevalent. The hypnotic properties of anesthesia are supposed to suppress consciousness, yet there are certain neural activities that persist despite anesthetic interventions. The question is which contenders are these neural activities and how to specify the degree of persisting awareness [2]. In addition, there are precipitating factors such as inadequate level of anesthesia, patient-related causative factors, and anesthesia equipment–related factors [3]. The ratio of percentages of individuals being affected by anesthesia awareness is rather small at 0.1% to 0.2% annually; however,