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Airway spatula introducer for King Vision videolaryngoscope

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To the Editor,

King Vision™ aBlade™ videolaryngoscope (KVV) offers better glottic view in comparison with Macintosh laryngoscope in normal and difficult airways (Murphy et al. 2014). But we found many of our colleagues were hesitating to use this videolaryngoscope in spite of it being readily available in our department. The most common reason was that they faced difficulty in inserting the rigid curved KVV into the patient's mouth when they tried. The insertion of the blade can be difficult in 27% of attempts (Shravanalakshmi et al. 2017). The display portion of the videolaryngoscope hitting on the patient's chest while trying to introduce the tip in to patient's mouth prevented further manipulation. Maneuvers like (1) introducing the aBlade™ alone into the mouth under direct vision and then attaching the display portion to the blade (2) placing the patient's head end in elevated position than the chest could help overcome this difficulty. Introducing videolaryngoscope at 90° or 180° to the oral aperture similar to an oropharyngeal airway and rotating back into the final position, as described with Airtraq (Dhonneur et al. 2007) would not guarantee midline placement of the blade without displacement of tongue to one side.

We conceived a concept of videolaryngoscopes introducer airway spatula which could help in easy and atraumatic introduction of rigid curved videolaryngoscopes in the midline without displacing the tongue. We modified a commercially available malleable, straight, stainless-steel icing spatula into an airway spatula (Ari's airway spatula) for easy introduction of King Vision videolaryngoscope into patient's mouth. Ari's airway spatula (Fig. 1)—a thin malleable straight stainless-steel spatula (3 cm width and 20 cm length) is preformed into two curvatures (Curve A and B) and a handle portion (12 cm). The length and curvature of both the curves A and B can be modified according to patient's morphology, thanks to the malleable nature of the spatula.

Curve A (*Tongue portion*). The tip portion of the spatula is shaped similar to the appropriate size oropharyngeal airway (angle of the mouth to angle of the mandible). This part keeps tongue depressed against the floor of the mouth and helps atraumatic introduction of videolaryngoscope into the mouth. It offers a smooth surface for the videolaryngoscope to slide into oral cavity easily without injuring oral mucosal surface. A very thin blade without flange helps in placement of the videolaryngoscope in midline.

Curve B (*Neck portion*). The remaining portion of the spatula is shaped similar to the anterior surface of the patient's neck (from mandibular symphysis to the suprasternal notch) in intubating position.

How we used it? (Fig. 2)

Step 1: Ari's airway spatula is introduced into the mouth and placed on the dorsum of tongue by the laryngoscopist under direct vision and an assistant maintains the mouth in opened position by gently pulling the handle caudally.
Step 2: The laryngoscopist introduces the KVV by placing the tip of the videolaryngoscope blade on the surface of the spatula and gently sliding it into the mouth under direct vision.
Step 3: When the blade tip is about to become invisible under direct vision, display portion is attached to the blade and switched on. Further insertion of the blade in

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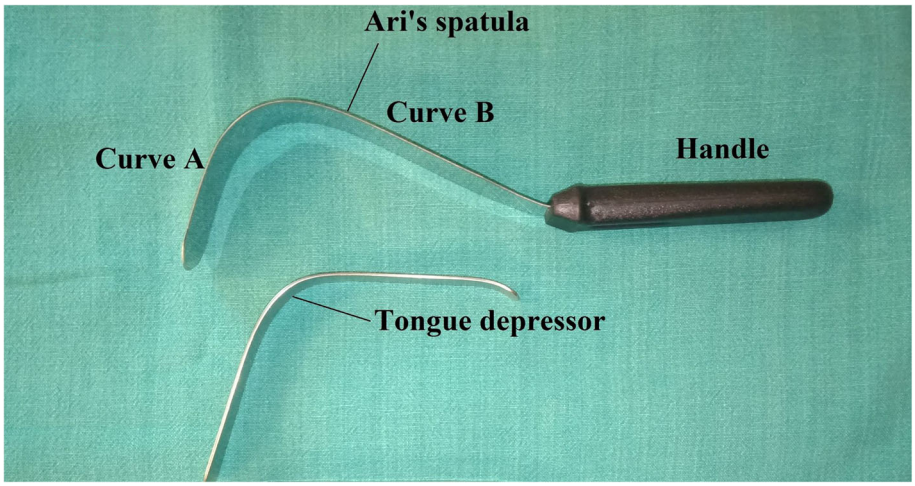

Fig. 1 Ari's airway spatula preformed into curves A and B (as it is malleable) is shown along with a rigid nonmalleable tongue depressor

to the mouth is guided by the visual images on the display.

Step 4: Intubation using KVV can be proceeded as per manufacturer's instruction with Ari's spatula in situ.

Manikin study

Ten operators with different levels of experience in using KVV did three attempts of intubation in a manikin in the following order, using (1) Macintosh laryngoscope, (2) KVV, and (3) KVV after placing Ari's airway spatula. After they had completed their intubation attempt using KVV, they were asked whether they would prefer KVV over Macintosh laryngoscope for the next attempt or not. Five operators (50%) said they would prefer KVV. The same question was repeated after completing their intubation attempt using Ari's airway spatula and KVV. All operators (100%) said they would prefer KVV for the next time.

Ari's airway spatula can be used to insert other videolaryngoscopes, laryngeal mask airways, and fiber-optic bronchoscope in to the patients' mouth easily and safely.

Fig. 2 Steps to use the Ari's airway spatula as an introducer for King Vision videolaryngoscope

Abbreviation
KVV: King Vision aBlade videolaryngoscope

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