

In reply: Comments on use of a Parker Flex-Tip tube[®] to facilitate intubation with the Pentax-AWS[®]

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First, we thank Dr. Xue and Colleagues for their interest in our recent manuscript [1].

We wished to introduce the difficult intubation case in which the Pentax-AWS blade failed to reach the larynx and thus elevation of the epiglottis was unsuccessful. In our experience, this situation is not so common in the Japanese population, probably because the design of the PBlade was determined from Japanese airway anatomy data. As we have already reported, if the blade tip was inserted toward the vallecula, intubation failed at high frequency with the standard bevel tube, even if a good glottic opening was achieved with indirect epiglottic elevation [2]. In most cases, this situation can be easily handled with the maneuver described by Dr. Xue. In our case, however, the epiglottis cannot be lifted directly and the standard tube failed to pass the vocal cord. When we used the Parker tube, however, it was able to pass through the vocal cord without impinging onto the epiglottis. Therefore, the title of the letter was determined as our previous manuscript [1].

To figure out the mechanism underlying this success, we conducted the mannequin study. We agree with Dr. Xue's opinion that the mannequin study is not as same as the situation we encountered. From the mannequin study, we

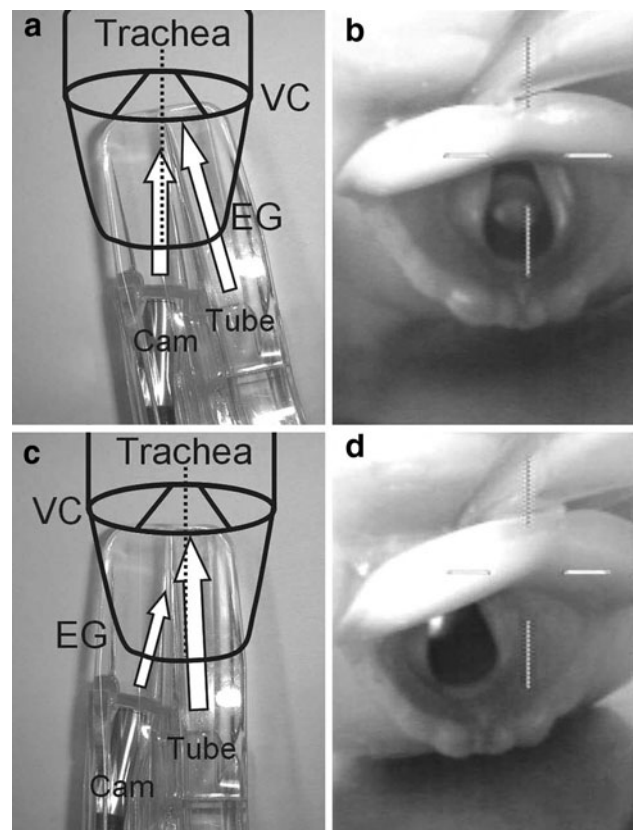


Fig. 1 Relationship between the line of sight of the camera and the route for tube passage. **a** When the line of sight of the camera is perpendicular to the trachea, there may be more chance for the tube to impinge on the epiglottis although the target symbol seems to be aligned to the vocal cord. **b** Corresponding laryngeal view of **a** on the monitor. **c** For successful intubation with the Pentax-AWS during indirect epiglottic elevation, the camera should yield its way to the vocal cord. Although the target symbol does not seem to be aligned to the vocal cord, the route for tube passage and the trachea is aligned. **d** Corresponding laryngeal view of **c**. VC, vocal cords; EG, epiglottis; Cam, line of sight of the camera; Tube, direction of the tube to be advanced

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can only say that “the Parker tube facilitates intubation when the AWS blade tip is inserted into vallecula.” However, with this mannequin study and photo image analysis of the blade tip, we thought we were able to show why this unique tube can be passed the vocal cord easily even when the AWS tip failed to lift the epiglottis directly.

Finally, we appreciate Dr. Xue’s careful observation of our figure. As Dr. Xue pointed out, the target symbol is not aligned to the vocal cord but aligned rightward from the glottic opening. We have already conducted a human study and found this is one of the important features for successful intubation when the epiglottis was indirectly lifted with the AWS. When the target symbol is aligned to the glottic opening (Fig. 1b), the tube will be contacted by the epiglottis, resulting in failed intubation (Fig. 1a). To increase the chance of success under this condition, the camera’s line of sight should not be aligned perpendicular to the trachea but the tube direction should be (Fig. 1c). To do so, the target symbol seems not to be aligned to the

vocal cords (Fig. 1d) but allows the tube to be advanced into the largest available space below the epiglottis, reducing the risk of impinging onto the epiglottis. The AWS user should understand the angle discrepancy (an angle of about 15°) between the camera and tube direction. When intubation difficulty with the AWS is encountered, manipulate the blade direction and provide a way for the tube to be advanced (Fig. 1c).

References

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