An infant's airway: A difficult terrain

And now, by all the words the preacher saith,
I know that time for me, is but a breath,
And all of living but a passing sigh,
A little wind that stirs the calm of death.

Hakim Omar Khayam (1048-1131 CE).[1]

In this issue of the journal Golzari *et al*. report the successful anesthetic management of a 4 months old infant undergoing vallecular cyst excision. An inhalational induction with sevoflurane was initiated followed by succinylcholine and endotracheal intubation. There are some points that need scientific clarification which would finally unveil this issue as to whether this case could have been managed otherwise or not.

After the loss of skeletal muscle tone, a trial laryngoscopy was performed and a cyst visualized at the base of the tongue. However, the epiglottis was not seen meaning thereby that a Cormak–Lehane grade[2] was encountered. Despite the fact that under such circumstances, a difficult intubation drill is advocated, the authors decided to give succinylcholine. What prompted them to use succinylcholine when they report an adequate skeletal muscle relaxation and a gentle laryngoscopy under an umbrella of high concentration of sevoflurane? If they could conduct gentle laryngoscopy and at the same time navigated the blade of the laryngoscope as far as to get a sneak at the base of the tongue and confirm that a cyst was residing at the vallecular without precipitating a laryngospasm which is so common in infants, a rational approach would have been to advance the blade a little farther with an intention of loading up the epiglottis with the tip of the blade thereby unfolding the entrance of the larynx and conducted intubation. Perhaps the use of succinylcholine was not justified as if could have ended up in a difficult mask ventilation and thus ushered in disastrous complications.

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When the authors could figure out the cyst at the vallecular region during their initial laryngoscopy, it is highly possible that the cyst had pushed forward the epiglottis obscuring its view, and a gentle advancement of the blade would have unfolded the entrance of the laryngeal inlet without necessitating the administration of succinylcholine. From the case report, it cannot be discerned whether a straight Miller blade or a Macintosh blade was used. The authors seemingly avoided the midline terrain during laryngoscopy and managed to intubate the patient by applying a cricoid pressure. Intuitively, we can assume that the authors used a straight Miller blade and advanced it to avoid the midline structures superior to the vallecula. The charade worked well and they could intubate the infant.

The Miller straight laryngoscope blade is regarded as the preferred blade to expose the laryngeal inlet in infants and children.[3] However, there is a dearth of evidence to support the superiority of the Miller blade in exposing the laryngeal inlet compared to the Macintosh blade in infants.[4] Likewise, Passi *et al*.[5] found similar laryngeal views with the Miller blade lifting the epiglottis and the Macintosh blade lifting the base of the tongue. The paraglossal intubation using a straight blade can be helpful in micrognathia.[6] This approach wherein the laryngoscope blade is advanced in the space between the tongue and the lateral pharyngeal wall thus bypassing the tongue and shortening the distance to access the larynx could have been of value in this particular case as it would have obviated an impingement of the cyst in contrast to using the Miller or the Macintosh blade cruising the classical midline terrain traversing the tongue, its base, the vallecula and the epiglottis. The cyst in this particular case might have pushed forward the epiglottis obscuring its view and this view was exactly what the authors could capture during gentle laryngoscopy.

The authors have erroneously used the phraseology, "cricoid pressure" while attempting intubation. Cricoid pressure

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was initially described by Sellick as a method to protect the patients from regurgitation of gastric contents during intubation,[7] and this maneuver was not at all intended to facilitate intubation. The authors state that a cricoid pressure was applied along with laryngeal pressure which helped them in visualizing the laryngeal inlet. It could be construed that the assistant applied external laryngeal pressure to better visualize the glottis, or else perhaps applied a backward, upward, rightward pressure (BURP), and initially forwarded by Knill.[8] The BURP maneuver, however, should not be combined with the Sellick maneuver (cricoid compression) because it would make the performance of the laryngoscopy difficult and visualization of the vocal cords highly impossible.[9] At times, anesthesiologists use different combinations such as applying external laryngeal pressure and positioning of the head and neck to execute intubation in difficult cases but the cricoid pressure has never been mentioned to provide a better look of the glottis and to work as a substitute for BURP. Cricoid pressure and BURP are totally different maneuvers and are exclusively and explicitly used for altogether different targets and different goals and are not to be confused.

Finally, I may conclude that before an anesthetic is administered, it is of paramount importance to correctly diagnose the potential airway problems so as to choose the alternative modalities of airway management.[10]

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