Preloaded d-grip bougie use caution

There is great benefit to simplifying a process to minimize adverse events and improve success. Airway management involves a complex series of tasks and decisions. Bougie use has proven to be a simple and effective adjunct in the difficult laryngoscopy & intubation scenario. Some advocate using it for every intubation to maintain this important skill and manage partial views of the glottic inlet. In this situation its smaller caliber allows for easy passage often with a direct view. However classically it is taught to be an adjunct where there is no view of the glottic inlet but the epiglottis is in-sight and preferably partially lifted away from the posterior pharyngeal wall (CL grade 3a). Here, bougie passage is blind and feedback of correct placement may occur with the sensation of tracheal clicks but more reliably by the sensation of distal hold-up, usually in the right mainstem bronchus at a point where the airway caliber approaches the diameter of the bougie. This distal hold-up occurs at ~ 30 cm +/- 5 cm in the adult. It should be reached by gentle forward placement of the bougie then once achieved the bougie should be pulled back 2-3 cm and stabilized for placement of the ETT.

There has been concern that hold-up causes trauma and clicks are reliable enough as an endpoint. Experience (as opposed to evidence) would suggest otherwise and clicks while reliable in the calm hands of some is not as reliable as distal hold-up especially in the scenario of managing a difficult airway in an emergency/critical care setting. Fine motor control is lost with stress induced heart rates of >115 and most humans will have a HR exceeding this threshold in this situation.
We suggest using clicks as a supplementary endpoint only when a partial view of the glottis is visualized.

So what does this have to do with the d-grip, which involves a preloaded bougie curled back so that the proximal end of the bougie is temporarily secured through the Murphy eye of the ETT. This allows single operator use of the bougie to intubate and simplifies the process for the user. However it also promotes a non-hold-up approach to bougie use relying on clicks for correct placement. When the bougie is prelaoded with a conventional ETT, folding it using a d-grip effectively shortens the bougie to a maximum length of 30 cm. Maximum meaning it will often be even shorter because of the natural tendency of the ETT to slide on the folded bougie exposing even less of the bougie. The shortening prevents the d-grip held bougie from reaching its potential hold-up endpoint. While it may be ‘released’ to avoid this, the ETT is already being committed to an unknown destination and in addition there may be false positive hold-up as the ETT hits right sided paraglottic structures.

Hard to visualize so check out the video. If you believe in the d-grip and still think its useful just be cautious of these potential serious limitations.

Click here to watch video on YouTube