Desaturation due to dislodgement of inflation line from SACETT™ — Suction Above the Cuff Endotracheal Tube

Sir,

There are few case reports on malfunction of the pilot balloon and inflation line of the endotracheal tube (ETT) in literature. We are presenting here, a case of inadvertent disconnection of inflation tube of Portex Blue Line SACETT™ — Suction Above the Cuff Endotracheal Tube (Smiths Healthcare Manufacturing S.A. de C.V.-Baja, California) from its insertion site. A 32-year-old male with pneumonia and sepsis was shifted to intensive care unit (ICU) for further management. In the ICU, we replaced his 7 mm ID PVC ETT with 8.5 mm ID Portex Blue Line SACETT™ suction above the cuff ETT. On the 2nd day of ICU stay, he developed sudden desaturation and audible leak around the ETT. Simultaneously ventilator has shown a disconnection alarm due to decreased expiratory tidal volume. We noticed that the pilot balloon of the ETT was deflated and was not possible to inflate. Rupture of ETT cuff was suspected and was exchanged with a new ETT over tube exchange catheter. On evaluation, the inflation line of the ETT cuff was found disconnected from its insertion site [Figure 1]. This was not suspected previously as the inflation line was fixed along the ETT with the adhesive tape.

Possible causes for this dislodgement are pulling out by the patient, inappropriate use of adhesive tape or a manufacturing defect in SACETT. The presumption that the inflation line might be pulled out by the patient was ruled out, as he was comfortable and sleeping on morphine infusion. The entire length of inflation line was intact, and there was no feature of stretching. Most likely reason for this dislodgement could be the adhesive tape used to fix the ETT, which included the inflation tube along with it. In this case, it was difficult to exclude the inflation tube from the fixation because the insertion sites of inflation tube and the suction tube of SACETT were just at the site of ETT fixation. The entry sites of inflation tube and suction tube of SACETT are at 21 and 22 cm marks, respectively. This is the level at which oral ETT is commonly fixed in adults. If the insertion sites of the inflation tube and suction tubes are above 24 cm mark, these tubes would not come in between ETT and adhesive tape. Further advantage would be that the entire inflation line would be outside...
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the oral cavity thereby offering protection from patient’s teeth, but this would preclude shortening of ETT, which is practiced in some ICUs.

Dislodgement of the inflation line from its insertion site has not been reported in the literature previously. This might be due to inadequate use of bonding solvent to attach inflation line to ETT.\[1\] We could not able to find any standards regarding how much stretching force the inflation line should withstand before it gets dislodged from its insertion site. There should be some standard peruse test to assess the integrity of inflation tube attachment to prevent future mishaps. Furthermore, the entry sites of inflation tube and suction tube should be away from the usual ETT fixation site.

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Conflicts of interest
There are no conflicts of interest.

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