

## A unique way of securing the tracheostomy tube in a case of facial and neck burns

Dear Editor,

It is estimated that the annual incidence of burns in India is 6–7 million, out of these nearly 1–1.5 lakh people require prolonged hospitalizations, multiple surgeries, and prolonged rehabilitation.<sup>[1]</sup> Frequently, these patients undergo multiple surgeries and are mostly tracheostomized if the site involves facial structures or upper torso. Maintaining the secured airway and the integrity of the skin are paramount and an essential part of supportive care. The use of adhesives and twill tie invariably leads to skin breakdown, ulceration, and infection of soft tissue thus complicating the condition of the patient. Here we describe a case in which we used an improvised strap for tracheostomy and prevented further complication.

A 16-year-old female admitted to the trauma intensive care unit (ICU) following tracheostomy and debridement of face and neck for facial burns of 20–25% total body surface area. Tracheostomy tube (TT) was secured with a twill tie without any sutures under gauze pads. The patient was agitated and uncomfortable with standard tracheostomy ribbon tie in spite of adequate analgesia. To allay the pain and prevent further skin breakdown we decided to improvise the ribbon by using the Foley catheter as a cover to ribbon and maintaining the secured TT. 18Fr Foley catheter made of latex rubber was cut on both the ends to make a hollow tube and then ribbon tie was inserted into the hollow tube,

both free ends of twill tie secured with flanges of a TT. The patient's neck was entirely covered with a soft tube rather than ribbon tie. This helped in preventing further skin damage caused by the tie. Figure 1 shows twill tie wrapped with the Foley secured with tube.

Common practice involves suturing the lateral edges of the TT flanges to the skin. This allows movement along the axis of the flanges and secures further with a strap. The strap must be placed tightly enough to keep the tube in place, yet if it is applied too tightly, skin ulcers and infection may develop underneath the strap due to capillary occlusion and on the other hand if the strap is not tied tightly enough, it may lead to accidental decannulation. The risk of ulceration is increased many fold in cases of facial and neck burns.

There are methods to secure endotracheal tube in facial burns like interdental fixation, Hollister endotracheal tube attachment device, alveolar ridge screws, orthodontic brackets, and even using IV fluid bottles as described in the literature.<sup>[2]</sup> However, very few choices exist in case of TT fixation like Velcro collar and SHILEY™ tube holder (COVIDIEN Ltd), metal TT holders. Velcro collar is routinely recommended for such cases. These are easy to apply and adjust, more comfortable for the patient, and less abrasive to the skin.<sup>[3]</sup> But unfortunately, these are not readily available universally and in case of emergencies. The high cost deters its further use in clinical practice.

To balance the risk of skin damage and the need to secure the tube firmly, we used same twill tie modified with the use of Foley catheter in the above case as depicted in the figure. It provided benefit in terms of easy use and comfortable wound care around



**Figure 1:** Twill tie wrapped with the Foley secured with the tracheostomy tube

the neck and prevented further local complications. The only disadvantage is it can cause latex allergy though silicone made Foley catheter would be comfortable and durable but may not be available in the resource-limited setting. The above method does ascertain short-term advantage, however, the long-term use cannot be suggested based on a single case report.

To conclude, this is a simple, easily available, and cost-effective method to secure the TT in facial burns patients and promote patient comfort.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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### Conflicts of interest

There are no conflicts of interest.

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