

TRACHEOSTOMY IN BURN PATIENTS - WHEN AND HOW? THE CLINICAL EXPERIENCE OF A BURN CENTRE. (V001)

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Introduction: Severe burn patients often require tracheostomy as part of their treatment. Current literature underlines the lack of consensus about indications, cases with neck burn, technique and timing of tracheostomy in burn patients[1][2].

The aim of this study is to present and analyse the clinical experience of our centre, as part of the development process of a local protocol standardising the approach of our centre when considering tracheostomy in burn patients.

Methods: We conducted a retrospective chart review of the severe burn patients that received tracheostomy in the Turin Burn Centre from January 2010 to April 2014. We collected the following data:

- patient details
- injury data
- indication, timing and technique of tracheostomy
- cases with neck burn
- outcome in terms of length of stay and survival.

Patients were followed up until discharge from the burn centre or death.

Results: Between January 2010 and April 2014, 429 patients were admitted to the Turin Burn Centre. They were 271 males and 158 females, with a mean age of 48.1 years and a mean TBSA of 17.75. 76 patients died (17.72%) and the average stay was 25.02 days (S.D.26.03, median 17 days). 49 patients (11.42%) required tracheostomy as part of their treatment. They were 30 males and 19 females, with a mean age of 54.63 years and a mean TBSA of 40.45%. 16 patients (32.65%) had a neck full thickness burn. 21 patients died (42.86%) and the average stay was 60.31 days (S.D. 37.57, median 48 days). Patients underwent mechanical ventilation on average for 34.41 days (S.D. 16.16, median 34 days). We performed tracheostomy on average after 11 days since admission (S.D. 6.44, median 10 days). 28 patients (57.14%) had tracheostomy performed in the first 10 days since admission (early tracheostomy) and 21 patients (42.86%) after 10 days since admission (late tracheostomy). We decided to perform tracheostomy in 31 patients (63.27%) in order to improve airway management in those expected to undergo lengthy treatment, in 18 (36.73%) for difficult weaning and in 5 (10.20%) after failed extubation.

We performed a surgical tracheostomy in 5 patients (10.20%) and percutaneous tracheostomy at the bedside in 38 patients (77.55%). In 4 patients (8.16%) we performed a percutaneous tracheostomy in the operating theatre after excision of neck burn tissue and before grafting of the neck region during the same surgical session (combined tracheostomy). All the 4 patients who underwent combined tracheostomy had a neck full thickness burn, and no complications were observed during the procedure neither the neck wound healing process was affected. We performed percutaneous and combined tracheostomies always under endoscopic guidance.

Conclusions: Tracheostomy is a relatively common procedure in severe burn patients. Tracheostomy is performed in the more severely injured patients. Both surgical and percutaneous tracheostomies can be safely performed. Choice of indication, timing and technique should be tailored to the patient, taking into account treatment program, comorbidities and areas of the body involved. In case of neck full thickness burn, percutaneous tracheostomy combined with surgical treatment of the neck burn is an option. Local protocols standardising the approach when considering tracheostomy in burn patients should be developed by the single burn centres according to their clinical experience and the current literature.

[1] Inhalation Injury: Research Progress and Needs Tina L. Palmieri, MD, FACS *Journal of Burn Care & Research* July/August 2007

[2] American Burn Association Practice Guidelines for Prevention, Diagnosis, and Treatment of Ventilator-Associated Pneumonia (VAP) in Burn Patients Michael J. Mosier, MD, Tam N. Pham, MD *Journal of Burn Care & Research* Mosier and Pham November/December 2009