Retrospective Review of Complex Tracheostomy Ward Round in Determining Barriers to Decannulation in Acquired and Traumatic Brain Injured Patients.

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Introduction:

Salford Royal NHS Foundation Trust is the regional centre for Major Trauma and Neurosciences. Often neurosurgical patients require a tracheostomy in order to wean from mechanical ventilation in a safe, comfortable and timely manner (1).

Complex tracheostomy ward round (TWR) occurs weekly across the acute wards; a Neurorehabilitation Consultant, Senior Physiotherapist, Specialist Nurse and Speech & Language Therapist review complex weaning patients.

Decisions regarding decannulation in this patient population are complex and should be made by a skilled MDT(2). Currently TWR reviews ward level patients only. A recent study suggested that patient centred, MDT reviews in critical care would improve quality of care, reduce time to decannulation, reduce length of stay (LOS) and reduce cost (3).

There is vast evidence surrounding indications for tracheostomy placement however, evidence regarding barriers to decannulation is lacking (4). Location of brain injury (4), cough effectiveness (5) and ability to manage oral secretions (6) are indicative of whether a patient will manage decannulation.

Recent evidence supports early external subglottic airflow (ESAF) for communication as well as swallow frequency and saliva management however, further research is required to determine the outcomes related to weaning (5).

Method:

Retrospective review of patients reviewed on TWR over a 3 month period (Jan-April 2019). Ward based therapists compiled a list of patients weekly who required a review. Data was obtained from emailed referrals to TWR and electronic patient records. The most common barriers were identified.

Inclusion: Brain injury with surgical intervention, LOS >6/52, reviewed at least twice on TWR.

Excluded: 3 patients: 1) Injury in 2016, recent deterioration resulting in tracheostomy. 2) Awaiting further surgery so not decannulated. 3) Clotting issues, airway remained in situ.

As this was a retrospective service evaluation, ethical approval was not required, data was collected from pre-existing clinical data.

	Barriers
B1	Inability to manage oral secretions
B2	Infection / Medical instability
B3	Airway issues
B4	PSH

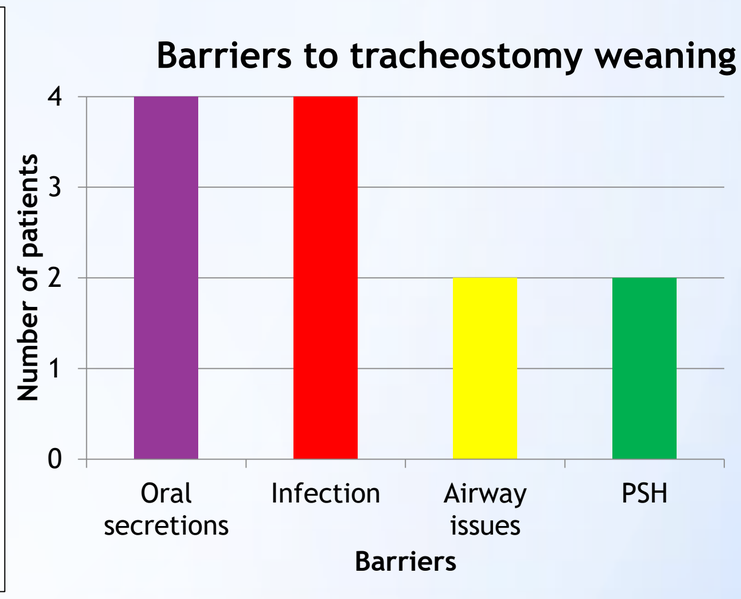
Aim: To identify the most common barriers to decannulation in complex neurosurgical patients and explore therapy options to overcome these.

	Diagnosis	Injury	Tracheostomy	Decannulated	Barriers
1	SAH	22/09/18	08/10/18	No	B1+2
2	TBI	06/12/18	21/12/18	Yes - 10/01/19	B1+4
3	SAH	15/12/18	27/12/18	Yes - 11/01/19	B2
4	Hypoxic Brain Injury	22/01/19	31/01/19	No	B1+4
5	ICH	21/01/19	06/02/19	Yes - 27/03/19	B3
6	Encephalitis	13/01/19	05/02/19	No	B1
7	TBI	13/01/19	17/01/19	No	B2+3
8	ICH	13/03/19	28/03/19	Yes - 03/06/19	B2

Results:

- 50% of patients decannulated
- Average days with a tracheostomy was 37 days.
- All patients remain inpatients therefore, it is not possible to determine LOS

NB. Only 25% of patients struggling to manage saliva have been decannulated.



Conclusion:

The highlighted barriers prolong the weaning process, increases the number of days with a tracheostomy in situ and increases LOS. Oral secretions is the largest barrier.

TWR provides a specialist MDT approach to managing complex patients over a 24hour period, ensuring weaning is progressive and safe, whilst providing the best possible outcomes. However, there are still a significant number of patients who experience barriers to decannulation. Could other therapies increase the effectiveness of weaning?

Considerations

ESAF is used at SRFT for providing above cuff vocalisation communication with ventilated/ tracheostomy patients. Recent evidence also supports its use in increasing swallow frequency, reducing residual oral secretion volume (7) and increasing frequency of non stimulated cough (5). Further research into the impact on the weaning process is required.

Could ESAF be utilised more frequently to improve sensation, promote swallow and saliva clearance in conjunction with medical management and appropriate cuff deflation trials?

Evidence supports an MDT approach on ICU in order to reduce weaning time, reduce weaning failure, reduce re-admission, reduce LOS and cost (8).

Would it be beneficial for an MDT to review these complex patients earlier in their journey (ICU/NHDU) in order to improve consistency with weaning and highlight ongoing rehab needs?

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