NTSP Podcast series

National Tracheostomy Safety Project

This month's top papers: March 2022

Welcome to the latest blog in the literature podcast from the NTSP. We try to bring you a quick roundup of what is hot in the world of tracheostomy and laryngectomy publications by scouring internationally recognised journals and media and bringing you the highlights.

The papers we will discuss this month are detailed below, along with an automated transcript of the podcast. Please note that the transcript is generated by AI and so may not be totally accurate.

You can find the links to the podcast on www.tracheostomy.org.uk and by searching for NTSP on your favourite podcast platform. Some of the podcasts are also uploaded to YouTube if you prefer to get your news that way. Check out the NTSP YouTube channel at https://www.youtube.com/c/NationalTracheostomySafetyProject. Please follow us and/or subscribe to keep up to date! https://x.com/NTSP_UK

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This month's top papers

- Tracheostomy healing time after decannulation.
- Tracheostomy Is Associated With a Decrease in Delirium and Sedation for Intubated COVID-19 Patients.
- Communication experiences of tracheostomy patients with nurses in the ICU: A scoping review.

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Tracheostomy healing time after decannulation.

Lay Summary:

This study investigated how long it takes for a tracheostomy wound to heal after the tube is removed. A tracheostomy is an opening in the neck for a breathing tube, and after it's no longer needed, the wound is typically left to close on its own. While the healing process can be uncomfortable and affect a person's social life, there's surprisingly little information about how long it takes.

Researchers followed 28 patients and monitored their tracheostomy wounds every day until they were completely sealed. They found that the healing time varied widely, from as little as one day to as long as 22 days, with the average being about 6.5 days. The only factor that was found to be significantly linked to a longer healing time was how long the patient had the tracheostomy tube in place. The longer the tube was in, the longer the wound took to close.

The study also noted that four patients had to have their tube reinserted shortly after it was removed due to breathing problems. The authors suggest that removing the tracheostomy tube as soon as a patient is ready could help them recover faster, as a shorter tube time leads to a faster healing time.

Summary for Healthcare Professionals:

This prospective observational cohort study aimed to determine the healing time of tracheostomy wounds after decannulation and identify associated factors. The study included 28 patients who underwent decannulation following prolonged mechanical ventilation. The primary endpoint was the time from decannulation to airtight healing, which was assessed daily by a single investigator.

The median tracheostomy healing time was 6.5 days, with a range of 1 to 22 days. The study found that the

duration of tracheal cannulation was the only factor significantly correlated with a prolonged healing time ($p=0.03$). Other factors, such as age, BMI, smoking status, and comorbidities, did not show a statistically significant association with healing time in this small cohort.

Four of the 28 patients experienced decannulation failure and required recannulation due to hypercapnia, respiratory failure, or secretion accumulation. The authors observed a high recannulation rate (four out of 28 subjects, 14.3%) which exceeded the generally accepted rate of 2-5%. The study concludes that the duration of tracheostomy closure is positively correlated with the length of time the tracheostomy tube was in place. The findings suggest that early decannulation may be a critical factor in promoting faster wound closure and patient recovery.

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Tracheostomy Is Associated With a Decrease in Delirium and Sedation for Intubated COVID-19 Patients.

Lay Summary:

This study looked at whether a tracheostomy (a breathing tube in the neck) could help reduce the need for sedatives and a condition called delirium in critically ill patients with COVID-19. Delirium is a state of severe confusion and disorientation that is common in intensive care unit (ICU) patients.

The researchers reviewed the records of 32 patients who received a tracheostomy. They compared the seven days before the procedure to the seven days after. The results showed a significant improvement in both sedatives and confusion:

- Sedation: The amount of opioids and benzodiazepines (strong sedating medications) a patient received was significantly lower in the week after the tracheostomy.
- Delirium: The number of days a patient was in a state of coma or delirium also significantly decreased after the tracheostomy.

The study concludes that a tracheostomy can be a key part of caring for these patients because it helps reduce the need for strong sedatives and lessens the number of days a patient is in a confused state. The authors emphasize that more research is needed to determine the best time to perform the procedure to achieve the greatest benefit.

Summary for Healthcare Professionals:

This retrospective study investigated the association between tracheostomy and the incidence of delirium and sedation requirements in 32 intubated COVID-19 patients with prolonged respiratory failure. The study compared clinical data, including Richmond Agitation Sedation-Scale (RASS) scores, Confusion Assessment Method for Intensive Care Unit (CAM-ICU) data, and sedative medication dosages, in the 7 days before and after tracheostomy placement.

The key findings demonstrate a significant decrease in sedative use and delirium post-tracheostomy. Specifically:

- Opioid Dosing: Decreased by 157.5 morphine equivalents (SD=339, P=0.01).
- Benzodiazepine Dosing: Decreased by 18 mg lorazepam equivalents (SD=34, P=0.01).
- Delirium/Coma: A significant decrease was observed in the proportion of days of coma or delirium (mean decrease in proportion = 0.16, SD=0.32, P=0.008).

The authors note that the decrease in sedative use and delirium is congruent with pre-COVID-19 studies. They hypothesize that a tracheostomy may create a perception of a "safer" patient (e.g., less risk of self-extubation), leading to a change in sedation approach. The study concludes that tracheostomy is associated with a decrease in sedating medications and delirium, which appears to be a reasonable intervention in this context, though further research is needed to determine optimal timing and patient selection.

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Communication experiences of tracheostomy patients with nurses in the ICU: A scoping review.

Lay Summary:

This review paper looks at how difficult it is for patients with a tracheostomy (a breathing tube in their neck) to communicate with nurses in the intensive care unit (ICU). The study is based on 19 different qualitative studies that focused on the experiences of 265 patients.

The review found that the inability to speak is a huge problem for these patients. They often feel trapped, helpless, and frustrated because they can't express their needs. Some patients even felt they had lost their identity or were "invisible". The main challenges for communication included:

- Physical Weakness: Patients were often too weak or had swollen hands, which made it hard to write or use communication boards.
- Noise and Distractions: The noisy ICU environment and too many visitors made it difficult for patients to get nurses' attention and have private conversations.
- Misunderstandings: When communication failed, it often led to feelings of anger and a sense of giving up.

The study also identified strategies that help, such as nurses being patient and attentive, asking simple questions, and maintaining eye contact. Family members also play a crucial role in helping nurses understand the patient's non-verbal cues. The authors conclude that communication should be a top priority, as it is essential for patients to feel safe, relieved, and respected as a person.

Summary for Healthcare Professionals:

This scoping review synthesizes the findings of 19 qualitative studies to describe the communication experiences of conscious tracheostomy patients with ICU nurses. The review, based on interviews and observations of 265 patients, identified two main themes: patient experiences and communication strategies.

The patient experience theme is characterized by profound negative emotions and significant difficulties. Patients reported feeling angry, frustrated, helpless, anxious, and socially isolated due to their inability to speak. Many felt a loss of identity, a loss of control, or that they were "invisible". Physical weakness, hand swelling, and physical restraints made writing and using communication aids difficult or impossible. Barriers to effective communication also included a noisy and hectic environment, which hindered attention-seeking actions and privacy.

The review also outlines strategies adopted to improve communication. Nurses who were patient, attentive, and used simple, closed-ended questions were more successful. They also used non-verbal cues like eye contact, gestures, and touch. Patients, in turn, used gestures, writing, and communication boards, though these methods were often difficult to sustain. The presence and involvement of family members were found to be a key facilitator of effective communication, as they could help staff interpret patient cues. The authors conclude that prioritizing communication is crucial for patients to feel safe, relieved, and actively involved in their care, and that nurse training programs should emphasize this fundamental need.

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Scientific abstracts and references

Multidiscip Respir Med. 2022 Feb 9;16(1):822. doi: 10.4081/mrm.2022.822. eCollection 2022 Jan 12.

Tracheostomy healing time after decannulation.

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BACKGROUND: Prolonged healing of tracheostomy after decannulation has a negative impact on respiration, hygiene, cosmetics, and social life. Even so, evidence-based observations of tracheostoma healing time are lacking. Therefore, the aim of this study was to determine tracheostomy wound healing time after decannulation. METHODS: In this prospective observational cohort study, we included 30 subjects undergoing decannulation following prolonged mechanical ventilation via tracheostomy. Our primary endpoint was tracheostomy healing time defined as time from decannulation to airtight healing. To identify any factors related to healing time, we included information about patient demographics, comorbidities, tracheostomy method, tube size, and intubation time. All subjects were observed daily until their tracheostomy wound had healed. RESULTS: The median tracheostomy healing time was 6.5 (1-22) days. The duration of tracheal cannulation was the only factor significantly correlated with prolonged healing (p=0.03). Four patients were subjected to recannulation shortly after decannulation due to hypercapnia, respiratory failure, secretion accumulation, or self-decannulation. All wounds achieved complete spontaneous airtight closure. CONCLUSIONS: Duration of spontaneous tracheostomy closure after decannulation was 1-22 days, and closure time correlated with duration of cannulation.

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Tracheostomy Is Associated With a Decrease in Delirium and Sedation for Intubated COVID-19 Patients.

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BACKGROUND: Patients with coronavirus disease 2019 (COVID-19) acute respiratory distress syndrome can experience prolonged periods of ventilation, high incidence of delirium, and require high amounts of sedation. Tracheostomy has been associated with earlier ventilator liberation, decreased sedation needs, and lower rates of delirium but optimal timing of tracheostomy remains unknown. Is tracheostomy associated with lower sedation requirements and lower incidence of delirium in patients with COVID-19 that are intubated? METHODS: We retrospectively reviewed the first 32 patients at a large urban tertiary referral center that underwent tracheostomy for prolonged respiratory failure. We obtained Richmond Agitation Sedation-Scale scores and Confusion Assessment Method for Intensive Care Unit data along with amount(s) and type(s) of sedating medications given, in the 7 days before and after tracheostomy. Proportion of days delirious and sedating medications were compared in the 7 days before and after tracheostomy. RESULTS: There was a significant decrease in the amount of opioids and benzodiazepines in the 7-day period following tracheostomy. Opioid dosing decreased by 157.5 morphine equivalents (SD=339, P=0.01) and benzodiazepine dosing decreased by 18 mg lorazepam equivalents (SD=34, P=0.01). There was no significant difference in antipsychotic or other sedative-hyponotic drug doses. There was a significant decrease in the proportion of days of coma or delirium (mean decrease in proportion=0.16, SD=0.32, P=0.008) following tracheostomy. CONCLUSION: Tracheostomy was associated with a significant decrease amount of sedating medications and with a decrease in proportion of days delirious following tracheostomy.

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Communication experiences of tracheostomy patients with nurses in the ICU: A scoping review.

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INTRODUCTION: The quality of care for tracheostomy and mechanically ventilated patients in intensive care units (ICUs) has improved considerably. However, the communication barrier attributable to these procedures generates many problems for patients, as they are unable to communicate effectively with family members and ICU healthcare professionals, especially nurses. AIMS: To describe (1) tracheostomy patients' needs, emotions and difficulties when communicating with ICU nurses and (2) which strategies nurses and patients have adopted to improve their communication. METHODS: A scoping review was completed using the Joanna Briggs Institute method and following the PRISMA-ScR Checklist. The research question was developed using the Population, Concept and Context framework. Five databases were searched. After screening, two researchers independently analysed the 75 papers, and finally, 19 studies were included in this review. RESULTS: All studies used a qualitative design. Seven adopted a phenomenological and two a hermeneutic approach, involving a total of 265 patients. Two main themes and four subthemes were identified: (1) the tracheostomy patients' needs, emotions and difficulties communicating with ICU nurses (patients' emotions, communication needs, and their content and difficulties) and (2) strategies that nurses and patients adopted to improve communication (communication strategies). CONCLUSIONS: It is essential to develop effective communication with tracheostomy patients to ensure they feel relieved, safe and considered. Communication content should focus on information relating to the person's personal condition and active involvement in care. RELEVANCE TO CLINICAL PRACTICE: It is important to prioritise the communication process in tracheostomised patients and create the organisational conditions that foster effective communication processes. Developing training programmes for new or practising nurses is essential to instil greater awareness about this crucial fundamental need.

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