Clinical Consensus Statement: Tracheostomy Care

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Objectives

- Explain why a clinical consensus statement on tracheostomy was developed.
- Describe the process used to achieve the final results.
- Identify key statements most important in the care of adult and pediatric tracheostomy patients.
- Interpret the opinions/suggestions of the consensus group and what the future implications should be for ORL nursing.

Disclosures

- No conflicts of interest or disclosures to report.
- No pharmacology content being presented.
- Thank you to the AAO-HNS for including ORL nurses in development of the CCS and for select content in this presentation.

Why a Clinical Consensus Statement on Tracheostomy?

- Approaches to tracheostomy care are currently inconsistent among clinicians and between institutions
- Goal is to reduce variations in practice when managing patients with a tracheostomy to minimize complications
- Purpose of consensus statement is to improve care among pediatric and adult patients with a tracheostomy

Why a Clinical Consensus Statement? (con’t)

- Literature review on care and management of tracheostomy shows a paucity of both well-controlled studies and high-quality evidence
- Majority of publications are book chapters, expert opinion, and small observational studies
- Since evidence-based research is lacking, the current literature does not support the development of a clinical practice guideline but favors a consensus of expert opinions
Background

- Tracheostomy is one of the oldest and most commonly performed surgical procedures among critically ill patients.
- In adults, the traditional surgical tracheostomy has been accompanied by the emergence of percutaneous dilatational techniques (PDT).
- In children, tracheostomy is most frequently performed in the first year of life due to the increased survival of premature infants requiring prolonged ventilation.

Scope and Purpose

- Statements address continuum of care for adult and pediatric patients with a tracheostomy including:
  - Initial tube change
  - Management of emergencies & complications
  - Prerequisites for decannulation
  - Management of tube cuffs and communication devices
  - Patient & caregiver education

Terminology

- There is debate about whether the correct terminology for the procedure is tracheotomy or tracheostomy.
- Tracheostomy is the operation of "opening the trachea".
- Tracheostomy has an ending derived from the word stoma and, strictly speaking, implies a permanent opening in the neck created by suturing skin flaps onto the tracheal walls.
- The terms are used interchangeably in published reports and a decision was made to use the term tracheostomy throughout the consensus process.

Methodology

- 3rd clinical consensus statement developed by AAO-HNSF.
- Opinion-based document (consensus), not evidence-based recommendations (guidelines).
  - Clinical practice guideline: statements that include recommendations intended to optimize patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options.
  - Clinical consensus statement: a public statement on a particular aspect of medical knowledge available at the time it was written, and that is generally agreed upon as the evidence-based, state of the art (or state-of-science) knowledge by a representative group of experts in that area.

Multidisciplinary Panel

- Multidisciplinary stakeholder panel consisting of 10 experts from:
  - American Association for Respiratory Care (AARC)
  - American Society of Pediatric Otolaryngology (ASPO)
  - American Broncho-Esophagological Association (ABEA)
  - American Head and Neck Society (AHNS)
  - American Laryngological Association (ALA)
  - Society of Otorhinolaryngology and Head-Neck Nurses (SÖHN)
  - Emergency medicine

Consensus Development Process

- Develop survey
- Distribute survey to panel
- Collect responses
- Incorporate changes based on survey
- Obtain changes (hardcopy drafts) validated with input from
- The panel members revisited

1. Institute of Medicine (2011); 2. Council of Europe (2003)
Modified Delphi Method

- Iterative method of obtaining and refining expert opinion
- Enables equal input from each panel member
- Reduces undue influence of a minority of participants
- Two Delphi rounds using Survey Monkey and 9-point Likert Scale

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- Topic structure included:
  - General Tracheostomy Care
  - Pediatric Tracheostomy Care
  - Adult Tracheostomy Care

Survey Results

- Results discussed via teleconference after each survey
- **Outlier** defined as any rating at least 2 Likert points away from the mean
- **Statements were categorized as follows:**
  - **Consensus statements:** Mean score of 7.00 or higher and have no more than 1 outlier
  - **Near consensus statements:** Mean score of 6.50 or higher and have no more than 2 outliers
  - **No consensus statements:** Did not meet the consensus or near consensus criteria

Survey Results (con’t)

- 77 total statements achieving consensus
  - 13 key statements identified by the panel in the document
  - 43 statements on general tracheostomy care
  - 13 statements on adult tracheostomy care
  - 8 statements on pediatric tracheostomy care
- 24 statements were **dropped** due to **no** consensus
- 7 Statements were **dropped** due to **near** consensus

Key Tracheostomy Care Consensus Statements (con’t)

- Purpose of CCS is to improve care among adult & pediatric patients with a tracheostomy
- Patient/caregiver education should be provided prior to performing an elective tracheostomy
- Communication assessment should begin prior to the procedure when non-emergent tracheostomy is planned
- All supplies to replace a tracheostomy tube should be at the bedside or within reach
- Initial tracheostomy tube change should normally be performed by an experienced physician with assistance of nursing staff, respiratory therapist, medical assistant, or another MD

Key Tracheostomy Care Consensus Statements

- In the absence of aspiration, tracheostomy tube cuffs should be deflated when the patient no longer requires mechanical ventilation
- In children, prior to decannulation, a discussion with family regarding care needs & preparation for decannulation should take place
- Utilization of defined tracheostomy care protocol for patient/caregiver education prior to discharge will improve patient outcomes & decrease complications related to tracheostomy tube
- Prior to discharge, patient should be given a checklist of emergency supplies that should remain with him/her at all times

Key Tracheostomy Care Consensus Statements (con’t)

- Prior to discharge:
  - Assess competency of tracheostomy care procedures of both patient and caregiver
  - Patient/caregivers should be educated on what to do in emergency situations
- In an emergency:
  - Dislodged, mature tracheostomy should be replaced with the same size tracheostomy tube, a smaller tube, or an ETT through the trach wound
  - For a dislodged tracheostomy that cannot be reinserted, the patient should be intubated (orally when able) if the patient is failing to oxygenate, ventilate, or there is fear the airway will be lost without intubation
General Tracheostomy Care Consensus Statements: Adults & Peds

- Initial tracheostomy tube should normally be replaced within 10 to 14 days (if PDT)
- When determining the appropriate diameter tracheostomy tube, consider:
  - Lung mechanics, upper airway resistance, & airway clearance
  - Indications for procedure and trachea size/shape
  - Clearance for ventilation and communication/speech
- Use tracheostomy tube ties (unless patient recently underwent local or free flap reconstructive surgery or other major neck surgery)
- Humidification should be utilized:
  - During the immediate post-operative period
  - If a patient requires mechanical ventilation or has a history of thick secretions

Tracheostomy Care Consensus Statements-Cuffs: Adults & Peds

- Tracheostomy tube cuff pressure should be checked routinely and adjusted as necessary
- Cuffs should be inflated with:
  - Bivona Aire -> air only
  - Bivona TTS tracheostomy tube -> sterile water only
  - Shiley tracheostomy tube -> air only
- Patients should not use a swallowing or speaking valve while the tracheostomy tube cuff is inflated
- If a tracheostomy cuff is broken and not functioning properly, replace it with a tube and functional cuff that can be readily inflated, if necessary
- Prior to cuff deflation, the tracheostomy tube and stoma should always be suctioned

Tracheostomy Care Consensus Statements-Education: Adults & Peds

- A treatment plan should be developed based upon a communication assessment to include possible recommendation for speech or swallowing valve and referral to a speech language pathologist
- A swallowing or communication valve may be recommended to patients who are stable to facilitate better speech and swallowing capacity
- If a patient and/or caregivers are incapable of properly caring for the tracheostomy, home nursing care should be considered
- A home care instruction manual for tracheostomy care should be given to patients/caregivers prior to discharge

General Tracheostomy Care Consensus Statements: Adults & Peds (con’t)

- After initial tube change, replacement of a tracheostomy tube should be supervised by experienced medical/nursing staff (in clinical setting)
- During hospitalization and at home, inner cannula should be cleaned regularly
- Stoma and tracheostomy tube should be suctioned:
  - When there is evidence of visual or audible secretions in the airway
  - If airway obstruction is suspected
  - Before and after the tracheostomy tube is changed
- If there is a blockage or the tracheostomy tube is malfunctioning, the tube should be replaced

Tracheostomy Care Consensus Statements-Complications: Adults & Peds

- Acute tracheostomy tube occlusion is most likely caused by a mucous plug, obstructing granuloma or insertion of the tube into a false tract
- Clinicians should assess patients with severe bleeding for innominate fistula
- Bronchoscopy is indicated among patients with suspected laryngotracheal stenosis or tracheoesophageal fistula
- In an emergency, a dislodged, fresh tracheostomy (within 7 days of tube insertion) should be replaced:
  - A tube the same size or a size smaller
  - Usually contact the service responsible for inserting the original tube
  - Observe the patient for a period of time afterwards
- A patient may be turned in bed once tube security has been assessed to avoid accidental decannulation

Tracheostomy Care Consensus Statements-Education: Adults & Peds (con’t)

- Prior to discharge, patients/caregivers should know:
  - Type, size, and length of tracheostomy tube
  - When and how to suction tracheostomy tube
  - When and how to clean tube and area around the tube
  - When and how to change tracheostomy tube ties
  - Signs of respiratory distress
  - How to use all home equipment associated with tracheostomy tube
  - Signs of infection and skin breakdown
  - Contact information
    - Health care provider
    - Other pertinent healthcare personnel
    - Equipment supply company
Pediatric

- 8 statements
- Initial tube change
  - 5-7 days
- Decannulation criteria

Adult

- 13 statements
- Initial tube change
  - 3-7 days
- Decannulation criteria
- Tube type for non-ventilator dependent patients
  - Metal
  - Plastic

Tracheostomy Care Statements
Achieving Consensus

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Tracheostomy Care Consensus Statements: Pediatrics

- Testing & documentation for decannulation
  - Bronchoscopy to ensure patient airway with no occluding suprastomal granuloma
  - Flexible laryngoscopy revealing at least one mobile vocal cord or a patent glottis
  - No S/Sx of aspiration
  - No ventilator assistance (2-4 months)

Tracheostomy Care Consensus Statements: Pediatrics (con’t)

- Capping trials
  - Capped all day and removed at night for several weeks (even when child has URI)
  - If pass capping trial and child >2 yrs old, then one of the following:
    - Capped sleep study
    - Capped exercise test
    - Nighttime capping trial while hospitalized & observed
  - For children who are too young/small to undergo successful capping trial, an individualized decannulation protocol needs to be developed

Tracheostomy Care Consensus Statements: Adults

- Decannulation Criteria
  - Initial indicators for tracheostomy should have improved/resolved to an appropriate degree
  - Tolerating capping without stridor
  - Fiberoptic laryngoscopy exam should confirm patent airway to the level of glottis/immediate subglottis
  - No evidence of gross aspiration
  - Fiberoptic laryngoscopy exam
  - Visualizing tolerance of secretions
  - Tracheostomy tube in place during capping trial should be uncuffed & may need to be downsized if large tube is present
  - Bronchoscopy may be needed if airway patency is a concern

Tracheostomy Care Consensus Statements: Adults (con’t)

- Patient should have effective cough when tracheostomy tube capped
- MD to confirm
  - Patient’s level of consciousness
  - Laryngeal-pharyngeal function
  - No further procedures requiring general anesthesia

Tracheostomy Care Consensus Statements: Adults (con’t)

- Decannulation procedure:
  - Remove tube
  - Clean site
  - Remove any remaining sutures
  - Cover site with a dressing
  - Gauze dressing should be changed daily and PRN
  - Instruct patient to apply pressure over the dressing with fingers when talking/coughing in order to decrease air leak
Dropped Statements

- Use of tracheostomy tube ties or sutures
- Tracheostomy cleaning methodology
- Use of cuffs
- Method, frequency & circumstances of tracheostomy tube change

So Now What?

Research Needs

- To define quality metrics related to tracheostomy care:
  - Optimal tracheostomy tube size
  - Role of tracheostomy tube cuff
  - Role of sutures and ties in preventing accidental decannulation
  - Cleaning and suctioning techniques
    - Sterile vs clean
    - Hospital vs home
  - Frequency and timing of tracheostomy tube change
  - Humidification: “to instill or not to instill” – that is the question!

- Correlate to early hospital discharge.

Research Needs (con’t)

- To define important factors in patients with a tracheostomy that may influence the frequency of:
  - Site infections
  - Accidental tube displacement
  - Emergency room visits
  - Hospital readmissions

- Important factors may include:
  - Optimal cleaning and suctioning techniques
  - Patient/caregiver education
  - Frequency of follow up care
  - Training/competency of home care nurses

Research Needs (con’t)

- Determine whether trained Advanced Practice Providers (Nurses and Physician Assistants) are able to perform initial tracheostomy changes with similar or fewer complication rates compared to experienced physicians

Internal Integration into Practice

- Developed table of Key Statements achieving consensus
  - Statements for both adult and pediatric patients
  - Statements for only adult patients
  - Statements for only pediatric patients

- Applicable to LIP or Nursing
- Categories
  - Policy/Procedure/Protocol
  - Patient Education
  - Staff Education/Orientation/Competencies
Internal Integration into Practice (con’t)
- Queried all P/P/P within organization using the following words:
  - Tracheostomy
  - Trach
  - Tracheotomy
  - ETT
  - Endotracheal tube
    - 100 documents were reviewed
    - Nursing; ED; Epidemiology; Respiratory; Other
- Online electronic skills manual reviewed

Next Steps – Internal Integration
- Updates to patient education materials
- Involve divisional APNs for staff orientation and annual competencies
- Continue interdisciplinary collaboration to ensure practice is based on evidence
- Meeting with Director of Nursing Research & EBP
  - Opportunities for a research study based on gaps in the literature

Summary
- CCS based on:
  - Expert opinion of a panel from a variety of disciplines involved in the care of children and/or adults with a tracheostomy
  - Consensus panel made suggestions about a large number of statements dealing with a variety of subjects:
    - Appropriate tracheostomy tube type
    - Suctioning
    - Humidification
    - Patient and caregiver education
    - Home care
    - Emergency care
    - Decannulation
    - Tube care (including use of cuffs and sutures)
    - Overall clinical airway management

Internal Integration into Practice (con’t)
- Nursing involvement: Peds; Med-Surg; Intensive Care; ED; Inpatient/Outpatient
- Stakeholder involvement
- CCS presented
- Time to review (6-8 weeks)
- Persistent follow-up
- Revisions presented for approval
- Nearly complete
- Need dedicated staff to organize!

Next Steps – External Integration
- Discussion at 2013 national conference
  - 50HN Practice/Research Committee
- External buy-in/interest in collaboratively addressing research gaps
  - Grant funding opportunities
  - Proposal development/institutional review board approvals
  - Non-experimental, descriptive research method
    - Survey of current practices
    - Nurses and licensed providers
    - Academic medical centers

Summary (con’t)
- Panel dropped a number of statements:
  - Utility of tracheostomy ties or sutures
  - Cleaning methodology
  - Specific circumstances when the tube should be changed
  - Utility of cuffs
  - Frequency of changing the tube
Thank you for your attention!

Questions?