JOURNÉES DES INFIRMIER(E)S

32ÈME ÉDITION
03 ET 04 OCTOBRE 2025

ORGANISÉES DANS LE CADRE DU 131ÈME CONGRÈS DE LA SFORL

Trachéotomie chez l'enfant et méthode de fixation : une revue de la littérature

Zina GHELAB, infirmière en pratique avancée, spécialisée filière ORL, Paris

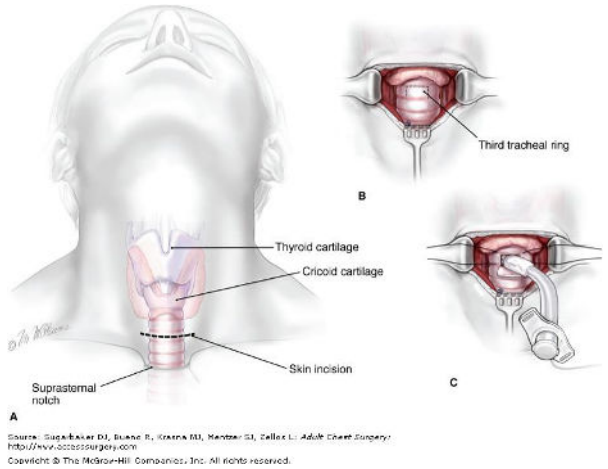
ASSISTANCE PUBLIQUE HÔPITAUX DE PARIS

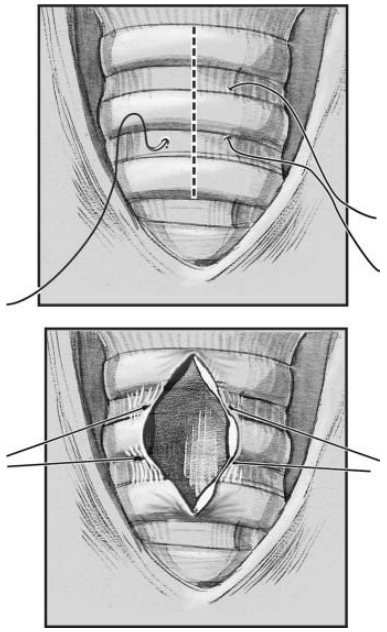
I / Contexte

Trachéotomie en pédiatrie

- Incision chirurgicale de la peau, de la paroi antérieure du cou et de la trachée qui est maintenue ouverte par une canule de trachéotomie.

- Technique chirurgicale





Campisi P, Forte V. Pediatric tracheostomy. Seminars in Pediatric Surgery. 1 juin 2016;25(3):191-5.

Trachéotomie en pédiatrie

Indications principales :

- Obstruction des VAS
- Ventilation prolongée
- Protection pulmonaire

Veder LL, Joosten KFM, Zondag MD, Pullens B. Indications and clinical outcome in pediatric tracheostomy: Lessons learned. International Journal of Pediatric Otorhinolaryngology. 1 déc 2021;151:110927.

Fuller C, Wineland AM, Richter GT. Update on Pediatric Tracheostomy: Indications, Technique, Education, and Decannulation. Curr Otorhinolaryngol Rep. 2021;9(2):188-99.

Gergin et al. Indications of pediatric tracheostomy over the last 30 years: Has anything changed? Int J Pediatr Otorhinolaryngol. août 2016

Trachéotomie en pédiatrie

Mise en place précoce dans la vie des enfants

- L'âge médian au moment de la trachéotomie est variable en fonction des études

Durée de la trachéotomie variable

- En fonction de l'indication
- En fonction des patients

McPherson et al. A decade of pediatric tracheostomies: Indications, outcomes, and long-term prognosis. Pediatr Pulmonol. juill 2017

Watters K et al. Two-year mortality, complications, and healthcare use in children with medicaid following tracheostomy. The Laryngoscope. nov 2016

Funk RT et al. Factors associated with tracheotomy and decannulation in pediatric bilateral vocal fold immobility. Int J Pediatr Otorhinolaryngol. juin 2015

McPherson ML et al. A decade of pediatric tracheostomies: Indications, outcomes, and long-term prognosis. Pediatr Pulmonol. juill 2017

II / Méthode de fixation en pratique

Possibilités

- Systèmes disponibles

Trachéotomie en pédiatrie



Possible décanulation => tension – arrachage – glissage, etc.

Lésions => pression et lacération

III / Que nous dit la littérature

Contents lists available at ScienceDirect

International Journal of Pediatric Otorhinolaryngology

journal homepage: www.elsevier.com/locate/ijporl

Care of pediatric tracheostomy in the immediate postoperative period and timing of first tube change

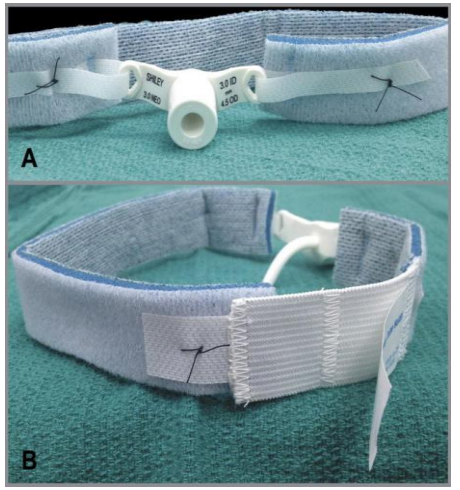
Dylan Lippert [a], Matthew R. Hoffman [a], Phat Dang [b], J. Scott McMurray [a], Diane Heatley [a], Tony Kille [a,*]

[a] University of Wisconsin School of Medicine and Public Health, Division of Otolaryngology—Head and Neck Surgery, 600 Highland Ave, K4/720 Clinical Science Center, Madison, WI 53792, United States
[b] Rush University Medical Center, Department of General Surgery, Chicago, IL, United States

- Etude rétrospective 2010-2014 (pré protocole 37 P – post protocole 35 P)
- Analyser la sécurité d'un protocole standardisé de soins de trachéotomie en pédiatrie en post opératoire immédiat
  - 2012 mise en place d'un protocole => Changement de fixation (avant cordon) – post T homogène et standardisé (pas de soins, mais un pansement absorbant changé par les ORL)
    - *Lésions cutanées – cicatrisation – sécurité changement de canule à J3 ou J4*

Comparison of complication rates between patients receiving tracheotomy before and after initiation of the standardized postoperative care protocol, showing significantly less skin breakdown and no increased difficulty of the tube change procedure. Each group is subdivided into standard vs. Bjork flap subgroups depending on the surgical procedure. *p*-Values represent the result of Fisher's exact tests. Data on day of tube change are presented as mean ± standard deviation; all other values are reported as a proportion.

	Standard			Bjork flap		
	Pre	Post	*p*-Value	Pre	Post	*p*-Value
Day of tube change (days)	6.21 ± 1.29	3.17 ± 0.38	<0.001	7.33 ± 0.71	3.40 ± 0.89	0.002
Complications during change	0/28	0/30	1.000	0/9	0/5	1.000
Skin breakdown	9/28	1/30	0.0048	3/9	0/5	0.0003



- Etude rétrospective 2011-2017 (109 P / 70 cordon – 39 Velcro)
- Comparer système velcro – cordon : post op J7
  - Lésions cutanées – décanulations accidentelles

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International Journal of Pediatric Otorhinolaryngology

journal homepage: www.elsevier.com/locate/ijporl

Retrospective comparison of Velcro® and twill tie outcomes following pediatric tracheotomy

Anna C. Bitners[a], William B. Burton[a], Christina J. Yang[a,b,*]

[a] Albert Einstein College of Medicine, United States
[b] Montefiore Medical Center and Children's Hospital at Montefiore, Department of Otorhinolaryngology-Head & Neck Surgery, United States

International Journal of Pediatric Otorhinolaryngology 116 (2019) 192–195

Fig. 1. Tracheostomy tube secured with twill tie.

Fig. 2. Tracheostomy tube secured with Velcro® tie.

Table 1
Demographic and clinical characteristics of patients receiving tracheotomy.

Variable	All (n = 109)	Twill (n = 70)	Velcro® (n = 39)	*P*-value
Sex				0.31
Male	60 (55.0%)	36 (51.4%)	24 (61.5%)	
Female	49 (45.0%)	34 (48.6%)	15 (38.5%)	
Age in Months (range)	24.1 (0–220)	19.6 (0–170)	32.0 (1–220)	0.19
Medical History				
Premature (< 37 weeks)	46 (42.2%)	31 (44.3%)	15 (38.5%)	0.56
Syndrome	22 (20.2%)	17 (24.3%)	5 (12.8%)	0.15
Indication				0.47
Cardio-pulmonary	97 (89.0%)	64 (91.4%)	33 (84.6%)	
Airway obstruction	9 (8.26%)	4 (5.71%)	5 (12.8%)	
Neurologic	3 (2.75%)	2 (2.86%)	1 (2.56%)	
Hospital				0.75
PICU	87 (79.8%)	56 (80%)	31 (79.5%)	
NICU	22 (20.2%)	14 (20%)	8 (20.5%)	

Table 2
Skin outcomes and accidental decannulation post-tracheotomy.

Outcome	Twill	Velcro®	OR (95% CI)	*P*-value
Skin Irritation	32 (45.7%)	10 (25.6%)	0.41 (0.17–0.97)	0.039*
Skin Breakdown	20 (28.6%)	6 (15.4%)	0.45 (0.17–1.25)	0.122
Accidental Decannulation	0 (0%)	0 (0%)		

Comparison of post-tracheotomy complications between patients with twill and Velcro® ties. *P*-values were determined using independent chi-square tests.
* Statistical significance was defined as alpha < 0.05.

PITAUX PARIS

- ECR 2014-2016 (0-21 ans) – 50 P / 27 V – 30 C
- Evaluer les complications entre F velcro – cordon (+ PST) TF J5
  - Lésions cutanées (Echelles)– Décanulations – Réajustement avec facilité d'utilisation
    - *Mise en place J0 – changement PST J3 – changement canule J5*

The Laryngoscope
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A Randomized Controlled Trial of Velcro Versus Standard Twill Ties Following Pediatric Tracheotomy

Catherine K. Hart, MD; Kareem O. Tawfik, MD; Jareen Meinzen-Derr, PhD; John Drew Prosser, MD; Cheryl Brumbaugh, MSN, CNP; Amy Myer, MSN, CNP; Jonette A. Ward, MMCTR, CCRP; Alessandro de Alarcon, MD, MPH

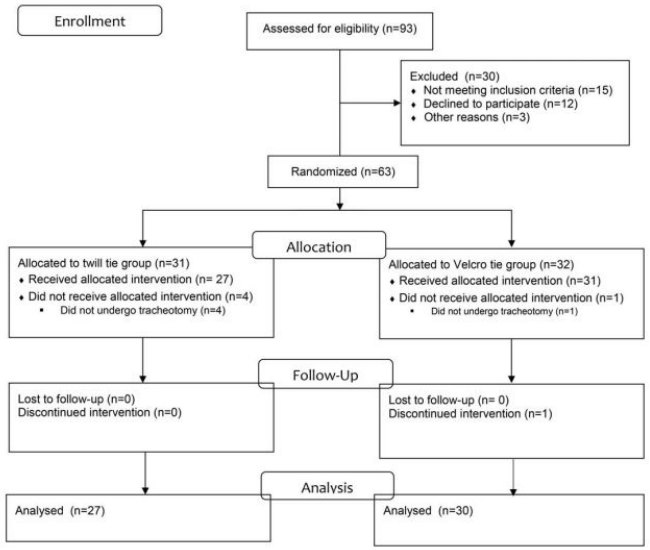

Fig. 1. Consort flow diagram.

TABLE IV.
Complications.

Complication	Velcro, n = 27	Twill, n = 30	*P*
Presence of any skin abnormality	12 (44.4%)	16 (53.3%)	.59
Tie change prior to day 3	2 (7.4%)	6 (20%)	.26*
Trach change prior to day 5	0	3 (10%)	.24*
Accidental decannulation	1 (3.7%)	2 (6.7%)	1.0

*Fisher exact test.

ASSISTANCE PUBLIQUE HÔPITAUX DE PARIS

- Revue systématique et méta-analyse (283 P /101 V - 137 C)
- Evaluer les complications entre F velcro – cordon TF
  - Lésions cutanées – Décanulation accidentelle
  - Etudes inclus => hétérogène (plusieurs actions évaluées)

Systematic Review/Meta-analysis

AMERICAN ACADEMY OF OTOLARYNGOLOGY–HEAD AND NECK SURGERY FOUNDATION

Otolaryngology–Head and Neck Surgery
2021, Vol. 164(6) 1148–1152

DOI: 10.1177/0194599820964727
http://otojournal.org
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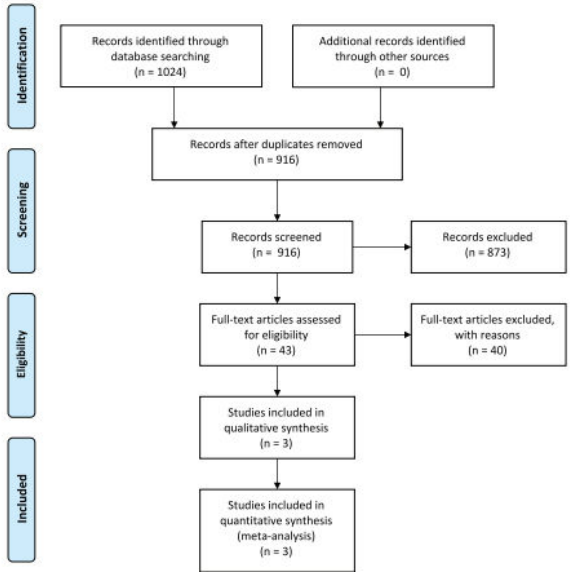
Velcro Ties in Early Postoperative Pediatric Tracheostomy Care: A Systematic Review and Meta-analysis

Brent A. Chang, MD[1], Joshua Gurberg, MDCM[2], Erin Ware, MLIS[3], and Kimberly Luu, MD, FRCSC[4]



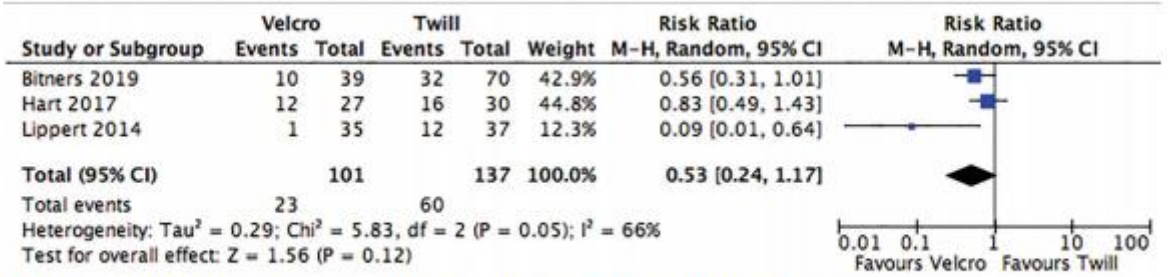


Figure 2. Forest plot comparison of skin-related complications between Velcro and twill ties.

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- Etude rétrospective 2013-2023
- P < 3ans
- Evaluer cordon – velcro post op immédiate pour signaler TF
  - Changement J5-7 par ORL, pas de changement pansement avant sauf si souillé (par ORL)

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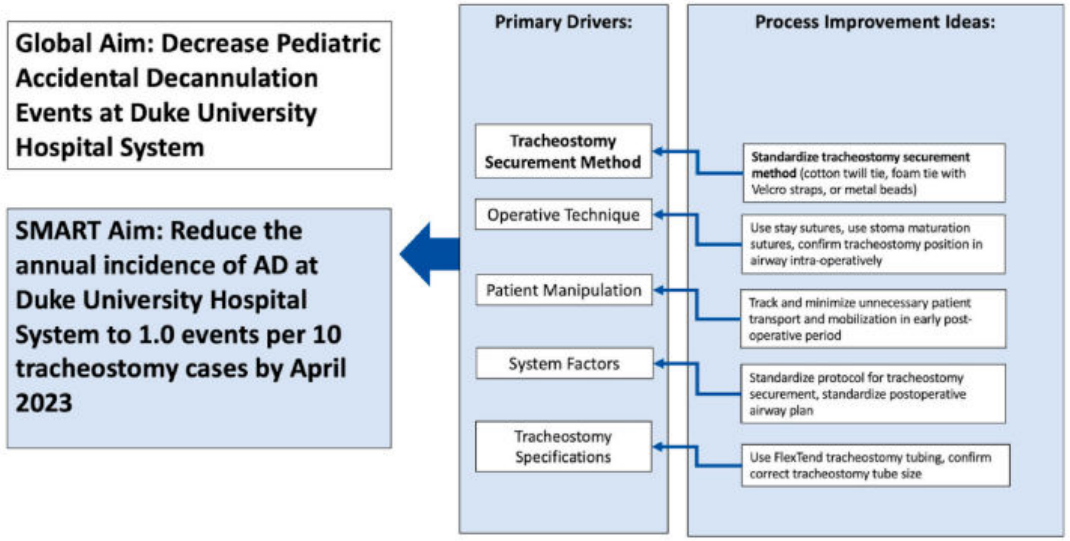
International Journal of Pediatric Otorhinolaryngology

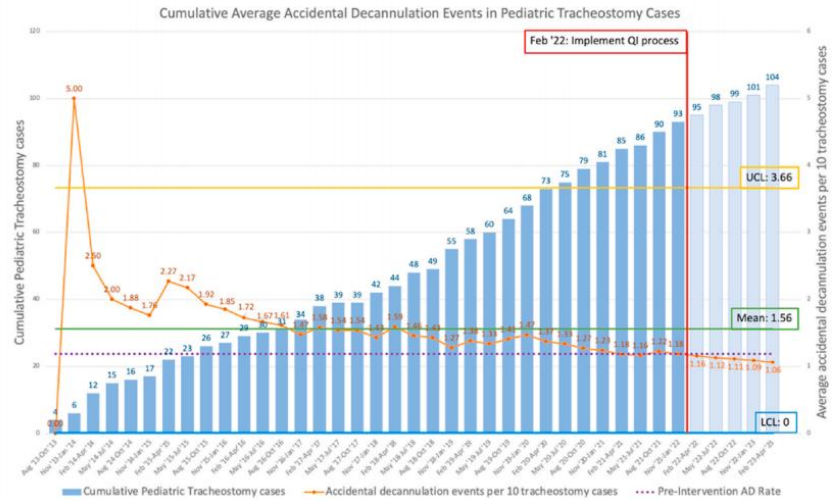
journal homepage: www.elsevier.com/locate/ijporl

Preventing pediatric accidental decannulation events: A quality improvement initiative

Alexander Cherches, MD[a,d,*], Avivah Wang, BS[a], Rolvix H. Patterson, MD, MPH[b,c], Janet Lee, MD[b], Jeffrey Cheng, MD[b]

[a] Duke University School of Medicine, Durham, NC, USA
[b] Department of Head and Neck Surgery & Communication Sciences, Duke University Medical Center, Durham, NC, USA
[c] Hubert-Yeargan Center for Global Health, Duke University, Durham, NC, USA
[d] Department of Otolaryngology - Head & Neck Surgery, University of Colorado, Aurora, CO, USA





En somme :

- Etudes rétrospectives +
- Etudes post –op immédiat
  - *Conditions de surveillance + / SVT USI - R*
- Suggère plutôt de ne pas manipuler la T pour limiter les risques
- Pas de différence sur la décanulation – Pas toujours significative sur les lésions (d'autres paramètres)
- Pas d'évaluation au long court => enfant => développement => expérience => école
- Pas d'évaluation du confort et de la facilité d'utilisation pour les concernés

IV / Perspectives

Etude préliminaire

- Etude préliminaire visant à décrire les pratiques actuelles en France
  - *Services d'hospitalisation*
  - *Domicile*

ECR – EC

- Evaluer les risques associés à l'utilisation des méthodes de fixation
- Evaluer le confort et facilité d'utilisation

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Merci

Zina GHELAB, infirmière en pratique avancée, spécialisée filière ORL, Paris

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