

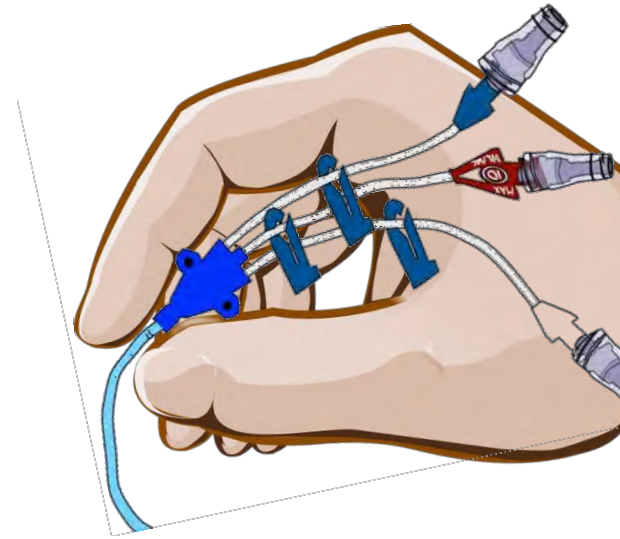
Here, hold this for me... please

VAD securement in 2019

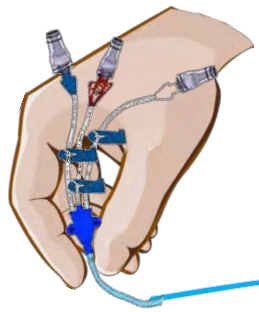
CVAA Education Webinar

France Paquet, RN, MSc, CVAA(C)

September 19, 2019



Canadian Vascular Access Association
Association Canadienne d'Accès Vasculaire



Disclosures



- Speaker bureau BD
- KOL Smiths Medical
- Consultant for the OIIAQ



Plan of the presentation

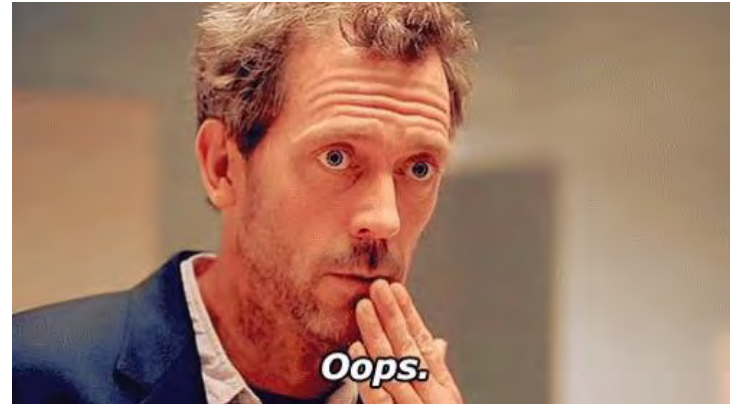


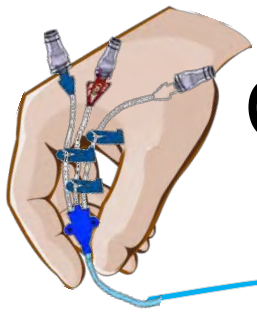
- Definition of terms
- Incidence of catheter dislodgement
- Impact of accidental dislodgement
- Available products to reduce dislodgement
- CVAA Guidelines Recommendations on securement
- MUHC experience in oncology



Definition of terms

- Accidental removal
- Catheter dislodgement
- Accidental dislodgement
- Catheter displacement





Catheter dislodgement and Migration

- Catheter dislodgement
 - an accidental removal or movement (greater than 0.5 cm) that resulted in the loss of function of the catheter.
- Catheter migration
 - an accidental removal or movement (greater than 0.5 cm) that did not result in the loss of function of the catheter



Incidence of catheter dislodgement

Support Care Cancer
DOI 10.1007/s00520-012-1554-0

ORIGINAL ARTICLE

Peripherally inserted central catheters (PICCs) in the management of oncohematological patients submitted to autologous stem cell transplantation

Silvia Bellesi · Patrizia Chiusolo · Gennaro De Pascale ·
Mauro Pittiruti · Giancarlo Scoppettuolo ·
Elisabetta Metafuni · Sabrina Giammarco ·
Federica Sorà · Luca Laurenti · Giuseppe Leone ·
Simona Sica

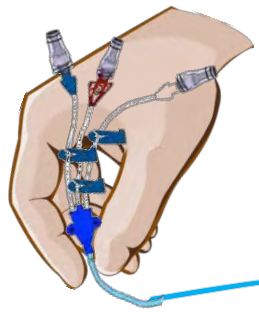
Received: 29 March 2012 / Accepted: 23 July 2012
© Springer-Verlag 2012

Abstract The aim of our study was to evaluate the feasibility and the safety of the use of peripherally inserted central catheters (PICCs) during autologous peripheral blood stem cell transplantation. Sixty PICCs were inserted in 57 patients (23 females and 34 males; mean age 48, range 19–68 years) and remained in place for an overall period of 1,276 days. All PICCs were positioned by a team of specifically trained physicians and nurses and utilized by specifically

trained nurses (2 patients, 3.3 %), CRBSI (2 patients, 3.3 %), accidental removal (3 patients, 5 %), lumen occlusion (1 patient, 1.6 %), positive culture from peripheral blood (1 patient, 1.6 %), and death (1 patient, 1.6 %). Our data suggest that PICCs are a safe and effective alternative to conventional central venous catheters even in patients particularly prone to infective and hemorrhagic complications such as patients receiving autologous stem cell transplantation.

- Observational study
- 60 PICCs in oncology
- Accidental removal (no definition)
- 3 patients, 5% or 2.3/1000 CD

Bellesi et al. Support Care Cancer (2012)



Incidence of catheter dislodgement

CLINICAL STUDY

Peripherally Inserted Central Catheters: Use at a Tertiary Care Pediatric Center

Craig Gibson, MBBS, Bairbre L. Connolly, MD, FRCPC, Rahim Moineddin, PhD, Sanjay Mahant, MD, Doina Filipescu, BS, and Joao G. Amaral, MD

ABSTRACT

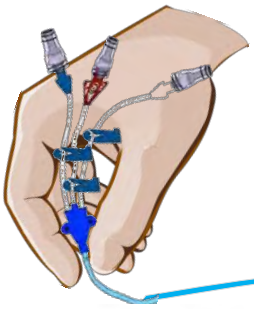
Purpose: To examine the use of peripherally inserted central catheters (PICCs) in a tertiary care pediatric setting.

Materials and Methods: An observational study of use and referral practices for PICCs in a tertiary care pediatric setting was performed with three distinct approaches: (i) in an institutional overview of trends, data between 2001 and 2012 were initially analyzed to identify high-level trends; (ii) an in-depth analysis of PICC referrals during 1 year was performed to determine details of referral patterns and clinical practices; and (iii) an electronic survey of the perception and understanding of referring clinical staff was conducted.

Results: During the past decade, there has been a steady increase in the number of PICC insertions and a decrease in median PICC dwell times. Discrepancies were identified between the anticipated versus actual dwell times. A large proportion of patients was found to have multiple PICC insertions, short dwell times, and premature PICC removals, potentially resulting in increasing risks of short- and long-term complications. Large percentages of the staff respondents valued the role of PICCs and had a good understanding of short-term complications, but underestimated the scale of the PICC service (numbers placed, resources involved) and several long-term complications associated with PICCs.

Conclusions: The number of PICCs inserted in children is increasing while PICC dwell times are decreasing. Better postprocedure care is important to minimize premature removals and avoid repeat insertions. Associated complications are not fully appreciated by the referring pediatricians. Further education and guidelines are needed.

- Observational study
- 754 PICCs in peds
- Accidental dislodgement: (accidental removal of a PICC)
56 PICC, 7.5%
- Malposition: Migration in/out (too long/short)
28 PICC, 3.7%
- 40/84 requiring reinsertion



Incidence of catheter dislodgement



Disponible en ligne sur
SciVerse ScienceDirect
www.sciencedirect.com

Elsevier Masson France
EM|consulte
www.em-consulte.com

Médecine et
maladies infectieuses

Médecine et maladies infectieuses 43 (2013) 350–355

Original article

Prospective follow-up of complications related to peripherally inserted central catheters^{☆,☆☆}

Suivi prospectif des complications associées aux cathéters veineux centraux insérés par voie périphérique

C. Leroyer^{a,*}, A. Lashéras^a, V. Marie^a, Y. Le Bras^b, T. Carterjet^c, M. Dupon^d, A.-M. Rogues^a

^a Service d'hygiène hospitalière, groupe hospitalier Pellegrin, CHU de Bordeaux, bâtiment PQR 1^{er} étage, place Amélie-Raba-Léon, 33076 Bordeaux cedex, France

^b Service d'imagerie diagnostique et interventionnelle, groupe hospitalier Pellegrin, CHU de Bordeaux, place Amélie-Raba-Léon, 33076 Bordeaux cedex, France

^c Service d'imagerie diagnostique et interventionnelle, groupe hospitalier Saint-André, CHU de Bordeaux, place Amélie-Raba-Léon, 33076 Bordeaux cedex, France

^d Service des maladies infectieuses et médecine tropicale, groupe hospitalier Pellegrin, CHU de Bordeaux, place Amélie-Raba-Léon, 33076 Bordeaux cedex, France

Received 5 October 2012; received in revised form 30 April 2013; accepted 18 June 2013

Available online 19 July 2013

Abstract

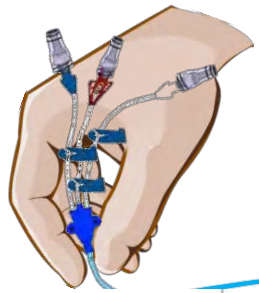
An increased use of peripherally inserted central catheters (PICC) in French hospitals has been observed in recent years. We report complications having occurred following the placement of PICC in a teaching hospital.

Patients and methods. – A prospective study was made for 7 months, between October 2010 and April 2011, including all patients having undergone PICC placement in interventional radiology.

Results. – Two hundred and sixty-seven PICC were inserted in 222 patients for intravenous antibiotic therapy (68%), parenteral nutrition (13%), or chemotherapy (9%). The median duration of PICC use was 17 days (min–max: 1–140) for the 200 PICC monitored until removal. The most common complication was obstruction ($n = 41$), 16 of which motivated PICC removal (8%). Five cases of vein thrombosis (2.5%) and 20 infectious

- Prospective study
- 267 PICCs in adults (sutured)
- Accidental dislodgement: pulling out of the catheter
- 14 PICCs, 7%

Incidence of catheter dislodgement



JVA
ISSN 1129-7298

J Vasc Access 2017; 18 (5): 408-414
DOI: 10.5301/jva.5000738

ORIGINAL RESEARCH ARTICLE

Impact of arm selection on the incidence of PICC complications: results of a randomized controlled trial

France Paquet^{1,2}, Louis-Martin Boucher^{1,2}, David Valenti^{1,2}, Richard Lindsay³

¹ McGill University Health Centre, Montreal, Quebec - Canada

² McGill University, Montreal, Quebec - Canada

³ Belfast Health and Social Care Trust, Knockbracken Healthcare, Belfast - UK

ABSTRACT

Introduction: The aim of this study is to determine if right arm peripherally inserted central catheters (PICCs) experienced fewer complications while controlling for gender, hand dominance, history of malignancy, dwell time and catheter size.

Methods: This was an intention-to-treat randomized controlled trial conducted in an academic medical center on two different sites between September 2012 and September 2015. All patients older than 18 years or age without known history of previous central line, contraindication to the use of a specific arm or hospitalized in the intensive care unit regardless of coagulation status, were considered for the study. Participants were randomized to the left or right arm group and were followed until catheter removal. Data collected included: PICC characteristics, insertion details, gender, arm dominance, history of malignancy, reason for insertion/removal, incidence of

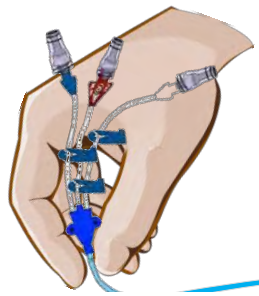
- RCT
- 202 PICCs in adults
- Accidental dislodgement: an accidental removal or movement (greater than 0.5 cm) that resulted in the loss of function of the catheter (Yamamoto 2002)
- 16 PICCs, 8% or 2.22/1000 CD



Incidence of catheter dislodgement

- RCT
- 127 PICCs in adults (hem-onc)
- Accidental dislodgement: Yamamoto to definition
- 14 PICCs, 11% or 1.8/1000 CD





Impact of accidental dislodgement

ORIGINAL ARTICLE

CE

Impact and Safety Associated with Accidental Dislodgement of Vascular Access Devices: A Survey of Professions, Settings, and Devices



Nancy Moureau, RN, PhD, CRNI®, CPUI, VA-BC™
PICC Excellence Inc., Hartwell, GA

Abstract

Background: Dislodgement rates with intravenous catheters are reported at 1.8%-24% events per year resulting in failed access, interrupted treatment, and greater resource consumption with catheter replacement. The purpose of this study was to quantitatively evaluate the perceptions of frequency, impact, contributing factors, and safety issues from accidental dislodgement affecting intravenous (IV) devices as reported by healthcare clinicians.

Methodology: A cross-sectional descriptive survey was conducted via a voluntary online web-based survey of clinicians. Subjects were divided as those actively working in a clinical healthcare setting and those no longer active. Analysis of data was performed quantifying responses of clinicians on question of dislodgement.

Results: Survey results indicate clinicians routinely observe a significant percentage of accidental dislodgement, with 68% of the 1561 respondents reporting often, daily, or multiple times daily occurrence and 96.5% identifying peripheral intravenous catheters as most common device experiencing accidental dislodgement. Respondents prioritized 10 contributing factors, with confused patient (80%), patient physically removes catheter (74%), and IV catheter tape or securement loose (65%) as the top 3 causes. Over 95% of respondents consider IV dislodgement a safety risk to patients.

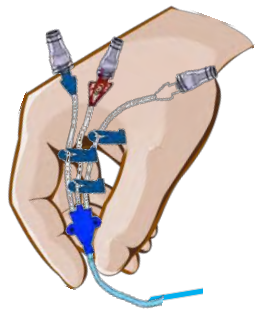
- Cross-sectional descriptive online survey
- 1426 respondents
- PIV and CVADs included
- Practices related to accidental dislodgement

Moureau, N. JAVA (2018), 23,4: 203-215



Survey results

- Observed
 - In every setting
 - In all type of devices
 - By all types of providers
- 68% respondents report frequency:
 - Often, daily and multiple times per day
- Less frequent in outpatient setting



What devices?

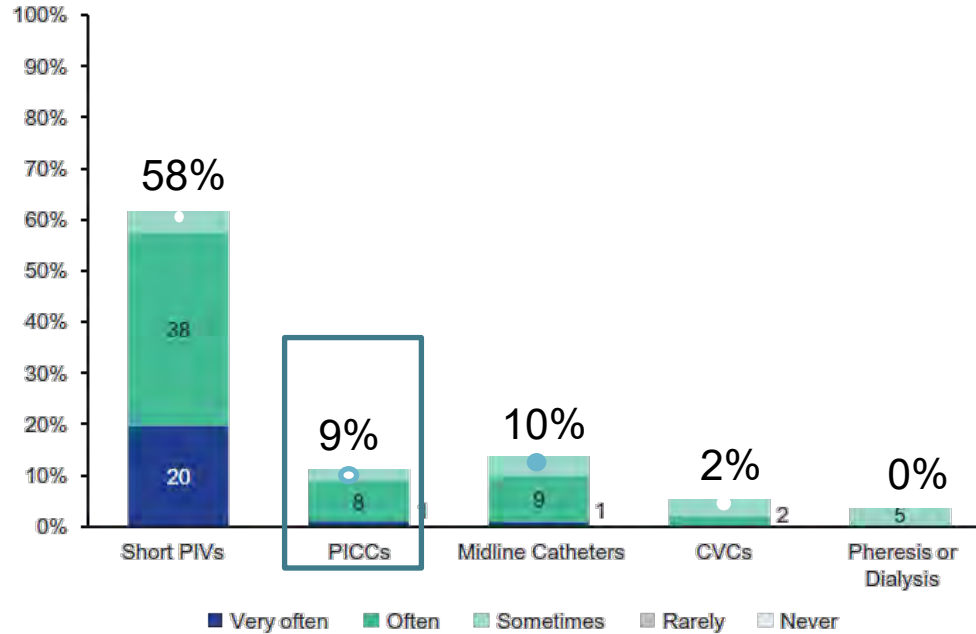
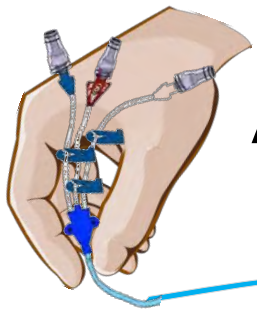


Figure 3. How often does an accidental dislodgement occur (by catheter type)? CVC, central venous catheter; PICC, peripherally inserted central catheter; PIV, peripheral intravenous.



Impact of Accidental dislodgement

- Treatment interruption (97%)
- Need to perform IV restart (97%) – ↓ reported by outpt
- Loss of access (94%)
- Extra time needed by staff (94%)
- Patient distress (91%)
- Additional supplies/cost (83%) – ↓ reported Bedside/outpt
- Bleeding (82%) – ↓ reported by outpt
- Skin tear (57%) – ↑ reported by vasc access team/mgmt
- Air emboli (31%)



Actions required to manage dislodgement

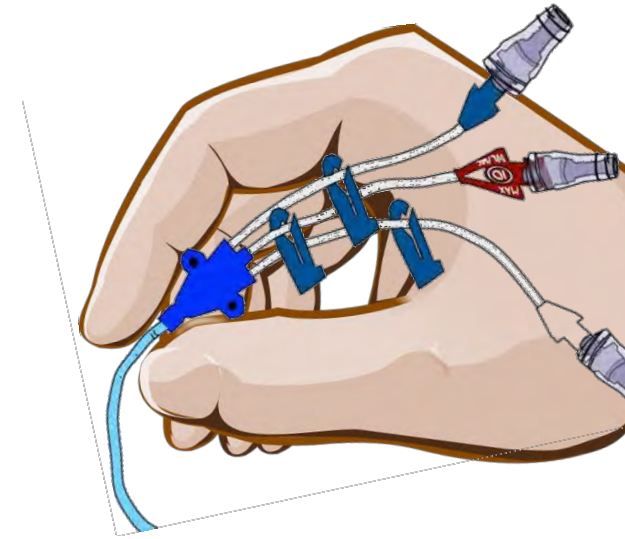
- Notification of other HCP
- Re-siting of the VAD
 - PIV: 6-30 minutes
- Management of pain



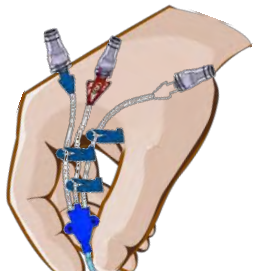
Contributing factors

- Patient removes catheter (conscious or not)
- Dressing becoming loose (hair, skin, perspiration)
- Normal ADL (tangled tubing, bathroom, tubing too long)
- Hospital policy (disconnecting or not)
- Number of accesses per day
- Paramedic insertion
- Securement procedure

What is available on the market?



Securement devices in PICCs



Fall 1997



A COMPARATIVE RETROSPECTIVE ANALYSIS OF TWO SECUREMENT TECHNIQUES FOR PERIPHERALLY INSERTED CENTRAL CATHETERS (PICC) AND MIDLINES IN THE HOMECARE SETTING

Previous studies have examined complications with both Midline and Peripherally Inserted Central Catheters, though few have focused on the

- Statlock® vs Steristrips+tape
- Retrospective review
- 178 Pts – 5347 catheter days
- PICC and midlines
- Dislodgement:
 - Steristrips+tape: 9/78 (5.35/1000 CD)
 - Statlock®: 7/100 (1.91/1000 CD)
- Removal because complication:
 - Steristrips+tape: 10.70/1000 CD
 - Statlock®: 2.18/1000 CD



Securement devices in PICCs

Sutureless Securement Device Reduces Complications of Peripherally Inserted Central Venous Catheters

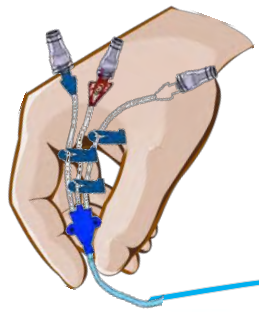
Alvin J. Yamamoto, MD, Jeffrey A. Solomon, MD, Michael C. Soulen, MD, James Tang, MD, Kim Parkinson, RN, Richard Lin, MD, and Gregory J. Schears, MD

PURPOSE: This study was conducted to evaluate the performance of a sutureless adhesive-backed device, StatLock, for securement of peripherally inserted central venous catheters (PICCs). Earlier studies have demonstrated that StatLock significantly reduces catheter-related complications when compared to tape. The purpose of this study was to determine whether a sutureless securement device offers an advantage over suture in preventing catheter-related complications.

MATERIALS AND METHODS: 170 patients requiring PICCs, which were randomized to suture ($n = 85$) or StatLock ($n = 85$) securement were prospectively studied. Patients were followed throughout their entire catheter course, and PICC-related complications including dislodgment, infection, occlusion, leakage, and central venous thrombosis were documented. Catheter outcome data were compared to determine if statistically significant differences existed between the suture and StatLock groups.

RESULTS: The groups had equivalent demographic characteristics and catheter indications. Average securement time with StatLock was significantly shorter (4.7 minutes vs 2.7 minutes; $P < .001$). Although StatLock was associated with fewer total complications (42 vs 61), this difference did not achieve significance. However, there were significantly fewer PICC-related bloodstream infections in the StatLock group (2 vs 10; $P = .032$). One securement-related needle-stick injury was documented during suturing of a PICC.

- Statlock® vs Suture in preventing catheter-related complications
- 170 Pts randomized
- Securement time shorter with Statlock®
- Fewer total complications (42 vs 61) NS
- Fewer CLABSI 2 vs 10 ($p=0.032$)



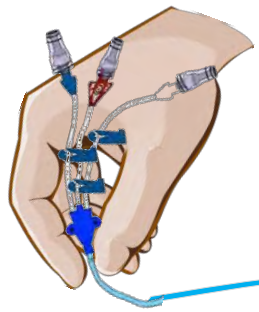
Cochrane review 2015



Dressings and securement devices for central venous catheters (CVC) (Review)

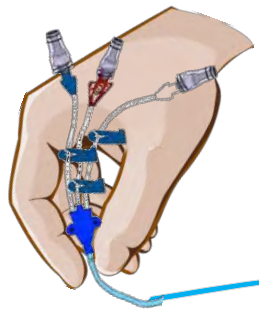
Ullman AJ, Cooke ML, Mitchell M, Lin F, New K, Long DA, Mihala G, Rickard CM

- Securement device must
 - Ensure catheter does not fall out
 - Protect against microbial colonisation and infection
 - Be comfortable



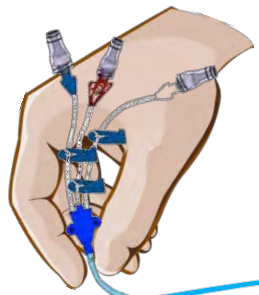
Cochrane review

- 22 studies included
- 7436 participants
- High risk of performance bias
- Blinding unclear
- Quality of evidence downgraded for imprecision / indirectness / risk of bias / inconsistency



Cochrane review – main results

- Sutureless securement devices as likely to be the most effective at reducing the incidence of CR-BSI (low quality evidence)
- *No conclusion on securement re accidental removal in review.*

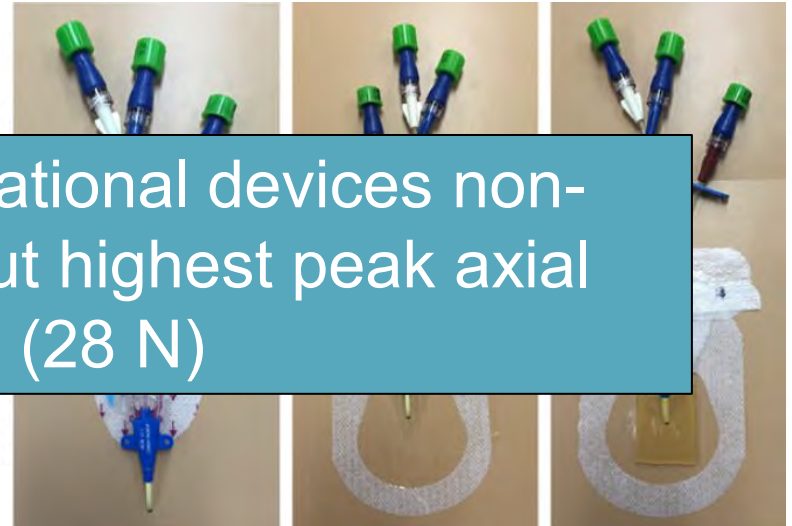


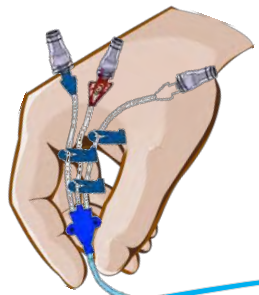
Other devices

- Rutledge et al (2015) – 5 arms (animal study) :

- Sutures
- S
- fil
- S
- 3M
- device + bordered transparent film
- 3M™ PICC/CVC securement device + Tegaderm™ CHG

Conclusion: 2 investigational devices non-inferior to Statlock® but highest peak axial pull force (40-41 N) vs (28 N)





Other devices

- Karpanen et al. (2019)
- Multicenter prospective RCT
- Primary outcomes:

Karpanen et al. *Ann. Intensive Care* (2019) 9:49
<https://doi.org/10.1186/s13613-019-0519-6>

Annals of Intensive Care

RESEARCH

Open Access

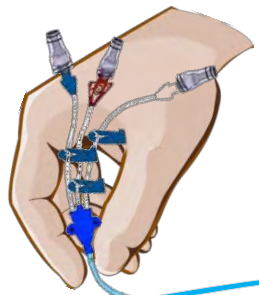
Conclusion: As good as sutures but dressing/
securement device is longer to change.

CVC securement

- 2/86 unplanned removal vs 5/85
(ns)

Abstract

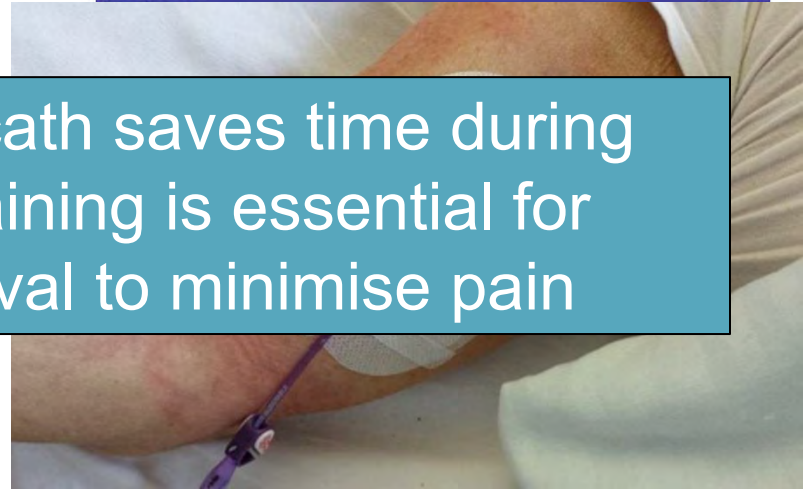
Background: Central venous catheters (CVCs) are commonly secured with sutures which are associated with microbial colonization and infection. We report a comparison of a suture-free system with standard sutures for securing short-term CVC in an international multicentre, prospective, randomized, non-blinded, observational feasibility study. Consented critical care patients who had a CVC inserted as part of their clinical management were randomized to receive either sutures or the suture-free system to secure their CVC. The main outcome measures were CVC migration



Other devices

- Goossens et al. (2018)
- Primary outcomes:
 -
 -
 -
 -
 - equal
 - More pain with SecurAcath® (removal and insertion)

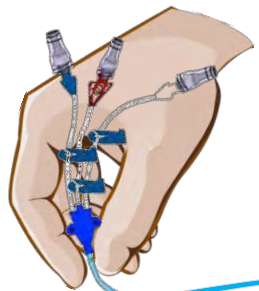
Conclusion: SecurAcath saves time during dressing change. Training is essential for placement and removal to minimise pain



016058.

complete catheter dwell time.

SECURACATH® DEVICES IS ISOLINITY.



Other devices

- Zerla et al. (2017)
- Prospective observational study

JVA
ISSN 1129-7298

J Vasc Access 2017; 18 (3): 238-242
DOI: 10.5301/jva.5000655

ORIGINAL RESEARCH ARTICLE

Evaluating safety, efficacy, and cost-effectiveness

Conclusion: SecurAcath® is effective and cost effective when duration is expected to be longer than 30 days.

- 0 dislodgement in 4963 catheter days

be employed. We applied this kind of analysis to subcutaneously anchored sutureless devices (SAS).

Methods: This is a one-center prospective observational study on safety, effectiveness and cost effectiveness of an SAS device (SecurAcath, Interrad) for securement of peripherally inserted central catheter (PICC) in 30 adult cancer patients with treatment expected to be >60 days.

Results: During 4963 catheter days and after 709 dressing changes (documented by 373 pictures), the use of SAS was associated with no episode of PICC dislodgement and a lower incidence of complications if compared to traditional securement devices. Insertion, management and removal of SAS were not associated with an increased pain perception by the patients. Cost effectiveness was particularly evident for long dwelling PICCs.

Conclusions: Our study suggests that SAS is a highly effective and cost-effective method for securement of medium- to long-term PICCs with expected duration longer than 30 days. The introduction of SAS had a positive impact on our healthcare organization.

Keywords: Complication, Cost-effectiveness, Oncology, SAS, Securacath



Tissue adhesives

Correspondence



Figure 5 CVP catheter being secured with tissue adhesive.

- First described in 2007 as a securing method for CVAD (correspondence)
- 1st glue : damaging to tissues
- 2nd generation: N-Butyl-2-Cyanoacrylate (NBCA)
- 3rd generation: then 2-Octyl-cyanoacrylate (OCA) – more flexible and lasting longer

Wilkinson et al (2007). *Anaesthesia* 62: 969–70.
Lawrence et al(2007) *Anaesthesia* 69:1407-8.
Scoppettuolo et al (2015) *Anaesthesia*70,750-63.



Tissue adhesive

Tissue adhesive for vascular access devices: who, what, where and when?

Amanda Corley, Nicole Marsh, Amanda J Ullman and Claire M Rickard

ABSTRACT

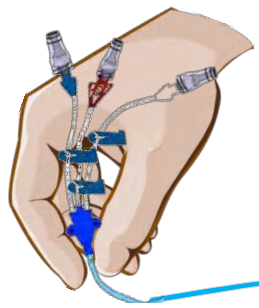
Despite vascular access devices (VADs) being vital for patient care, device failure rates are unacceptably high with around 25% of central venous devices, and 30–40% of peripheral venous devices, developing complications that result in VAD failure. The use of tissue adhesive is a novel method of securing VADs and is gaining popularity, however the evidence base guiding its clinical use is still emerging. This article aims to review the types and properties of tissue adhesives, provide an overview of the existing evidence base, and discuss how tissue adhesives may be used in clinical practice.

Key words: Vascular access devices ■ Tissue adhesives ■ Cyanoacrylate glue ■ Dressing and securement methods ■ Infection control ■ Peripheral catheterisation ■ Central venous catheterisation

of central venous devices, and 30–40% of peripheral intravenous devices developing complications that impair function or cause removal (McGee and Gould, 2003; Bolton, 2010; Rickard et al, 2010; Chopra et al, 2013). Reasons for VAD failure are multifactorial and include occlusion, accidental dislodgement, breakage, extravasation, phlebitis, thrombosis, and local or systemic infection (Ullman et al, 2015a). The implications of VAD failure are missed or delayed treatment for the patient, pain, and increased costs to the health care system. Additionally, re-siting failed VADs can be distressing and increases risk to the patient (Helm et al, 2015).

A wide range of dressing and securement options are available to clinicians and these are important in preventing VAD failure (Ullman et al, 2015b). They provide a barrier to

- One to 2 drops are sufficient
- NBCA/OCA do not weaken catheter material
- Much stronger than dressing only
- In CVADs, used to achieve hemostasis



Tissue adhesive

CLINICAL STUDY

A Pilot Randomized Controlled Trial of Novel Dressing and Securement Techniques in 101 Pediatric Patients

- Kleidon et al (2017)
- RCT 3 arms – 101 patients:

Tricia M. Kleidon
Victoria
Jason Schoutrou

Conclusion: Safe and efficient, less bleeding after insertion but tissue adhesive more difficult to remove and cause more skin tears.

ABSTRACT

Purpose: To evaluate feasible techniques to prevent comp

Materials and Methods:

Children's Hospital, Brisbane, Australia, between April 2014 and September 2015. Pediatric participants (N = 101; age range, 0–18 y) were assigned to standard care (bordered polyurethane [BPU] dressing, sutureless securement device), tissue adhesive (TA) (plus BPU dressing), or integrated securement dressings (ISDs). Average PICC dwell time was 8.1 days (range, 0.2–27.7 d). Primary outcome was trial feasibility including PICC failure. Secondary outcomes were PICC complications, dressing performance, and parent and staff satisfaction.

Results: Protocol feasibility was established. PICC failure was 6% (2/32) with standard care, 6% (2/31) with ISD, and 3% (1/32) with TA. PICC complications were 16% across all groups. TA provided immediate postoperative hemostasis, prolonging the first dressing change until 5.5 days compared with 3.5 days and 2.5 days with standard care and ISD respectively. Bleeding was the most common reason for first dressing change: standard care (n = 18; 75%), ISD (n = 11; 69%), TA (n = 4; 27%). Parental satisfaction (median 9.7/10; P = .006) and staff feedback (9.2/10; P = .002) were most positive for ISD.

Conclusions: This research suggests safety and acceptability of different securement dressings compared with standard care; securement dressings may also reduce dressing changes after insertion. Further research is required to confirm clinically cost-effective methods to prevent PICC failure.

- 32 Tissue adhesive + securement dressing



IT'S PROS AND CONS TIMES

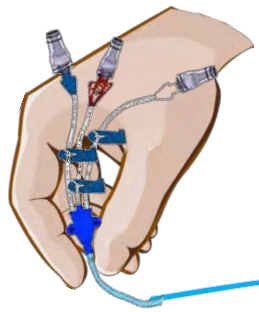
Citytv



Sutures

- Pro
 - Cheap
 - Hold catheter in place when removing dressing
- Cons
 - Increased risk of infection
 - Often source of exudate





Steristrips + Transparent film

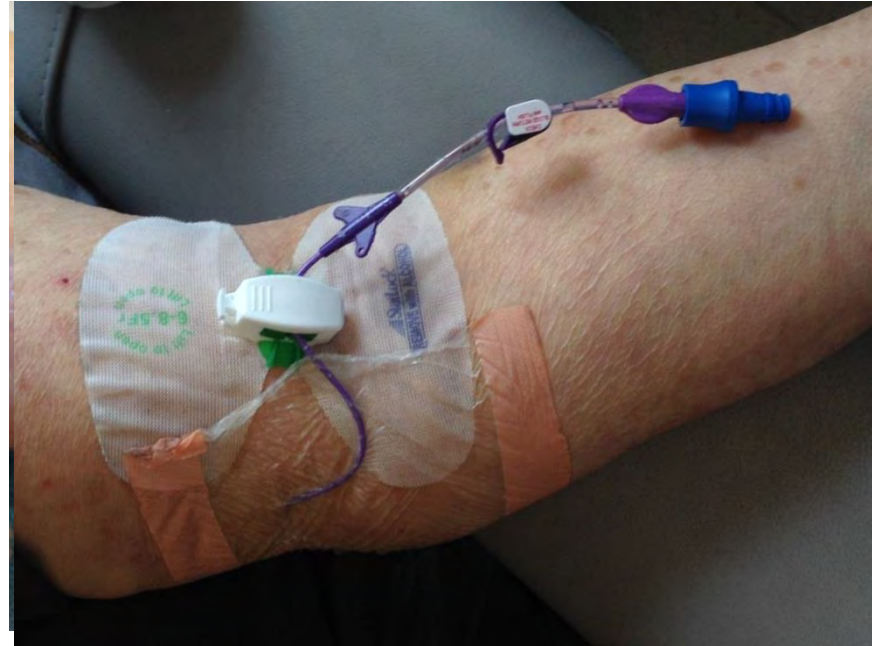
- Pro
 - Cheap
 - May hold better than just transparent film (but no data to prove it...)
- Cons
 - Need to be replaced with dressing change

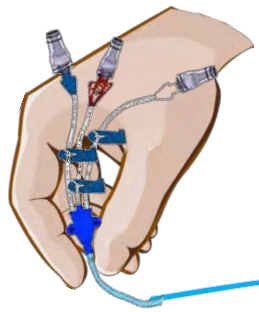




Statlock ®

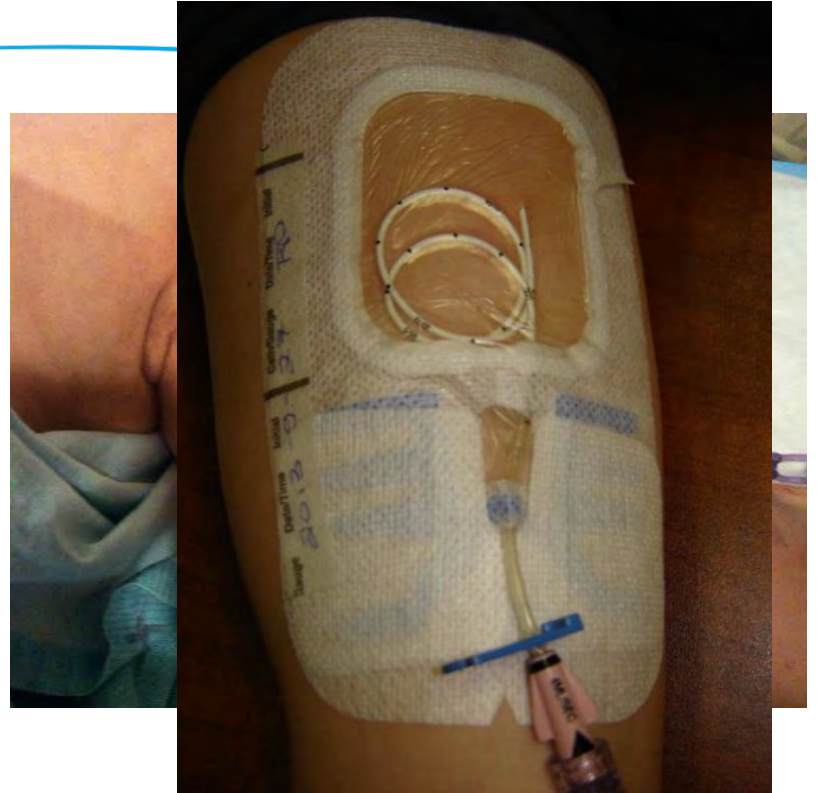
- Pro
 - Holds better than just transparent film
- Cons
 - Takes long time to replace
 - Requires use of sterile gloves when changing
 - Requires some level of knowledge for application
 - Not interchangeable





Integrated Securement dressing

- Pro
 - Can be replaced using no touch technique
- Cons
 - When lifting, nothing holds catheter
 - Harder to handle external portion





3M™ PICCCVC securement

- Pro
 - 1 product for many catheters
 - Provides more securement than just transparent film
- Cons
 - Needs to be replaced

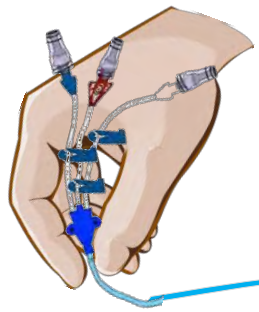




SecurAcath®

- Pros
 - One device for the whole duration
 - Catheter does not move during dressing change
- Cons
 - Costly at the time of insertion





Tissue adhesive



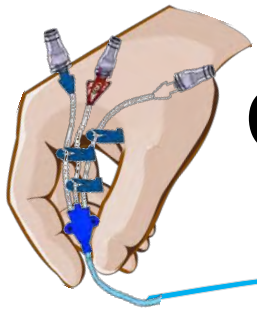
- Pros
 - No dressing change needed 24 hours post insertion
 - Bleeds less
- Cons
 - Costly at the time of insertion
 - More difficult to remove



#YOUNGERTV

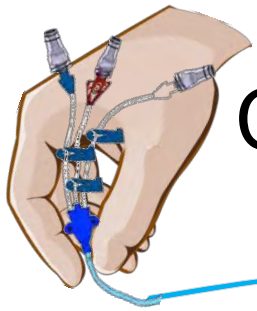


I DON'T KNOW WHAT TO DO



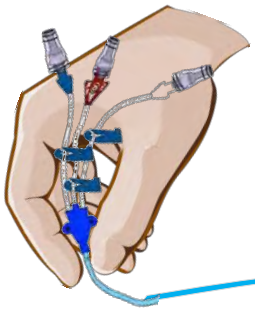
CVAA Guidelines Recommendations

1. Use sutureless securement (including engineered securement devices) to limit movement of VAD (CDC, 2011; INS, 2016). [IA]
2. Use method of securement that includes, but is not limited to (INS,2016): [IB]
 1. Transparent dressing with securement properties
 2. Adhesive securement device
 3. SC securement device
 4. Integrated stabilization feature on PVAD
 5. Medical-grade cyanoacrylate tissue adhesive



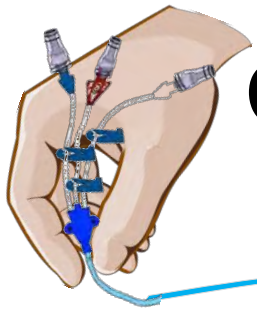
CVAA Guidelines Recommendations

- Use suture only for tunneled CVAD post-insertion. Remove sutures within 2-4 weeks and when cuff has adhered, in consultation with MRP. [ICVAA]
- Ensure securement method does not compromise ability to perform site assessment, limit vascular circulation, or impair skin integrity (INS, 2016; RCN, 2016). [IC]



CVAA Guidelines Recommendations

- Do not rely on tape, gauze and non-bordered transparent dressing, or rolled bandage as method of securement (CDC, 2011; INS, 2016). [IIA]
- If using tape, use only sterile tape under sterile dressing (INS,2016). [IB]
- Ensure securement method does not compromise ability to perform site assessment, limit vascular circulation, or impair skin integrity (INS, 2016; RCN, 2016). [IC]



CVAA Guidelines Recommendations

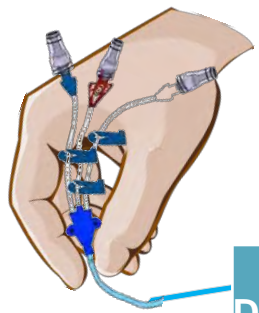
- Assess integrity of securement device on an ongoing basis and replace if securement is no longer effective (INS, 2016).
[IB]



MUHC experience

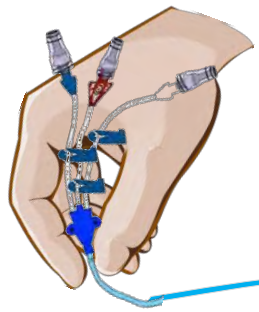
- Introduction of SecurAcath® in oncology population in June 2017
- 116 patients (40 pre, 76 post)
- Average dwell time 62 days





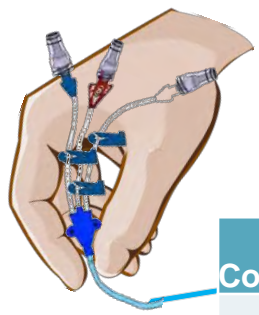
Patient's demographics

Demographics	Adhesive/ stabilization dressing	SecurAcath®	p-value
Number of pts	40	76	
Average age	64	59	0.058
standard dev	12.07	14.01	
Gender (f)	19	32	0.694
Side of insertion Right	38	67	0.326
Double lumen catheter	36	66	0.768
Anticoagulated	14	17	0.186
Previous CVL	14	24	0.835
Malignancy			
Solid	16	30	1
Hematologic	24	46	
Dwell time (average)	56 (4-275)	69 (1-281)	0.2651
standard dev	55.4	61.41	
Total Dwell time	2209	5205	



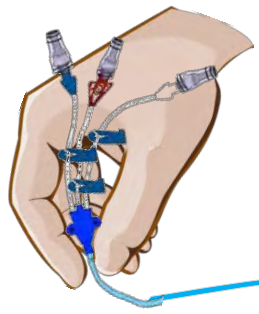
Complications

- Statlock® /IV Advanced
 - 9/40 dislodgements
 - 4.07/1000 CD
 - 10/40 reinsertions
 - 4.49/1000 CD
- SecurAcath®
 - 6/76 dislodgement
 - 1.15/1000 CD **p=0.0037**
 - 10/76 reinsertions
 - 1.92/1000 CD **p=0.0482**



Complications

Complications	Stabilization dressing		SecurAcath®		p-value	95% CI
	n	Rate/1000 CD	n	Rate/1000 CD		
bleeding at insertion site	1	0.45	3	0.58	0.8339	0.015 to 9.782
Catheter dislodgement	9	4.07	6	1.15	0.0037	1.124 to 12.067
Migration external portion	2	0.90	1	0.19	0.1626	0.245 to 278.027
Skin infection insertion site	2	0.90	1	0.19	0.1626	0.245 to 278.027
CLABSI	1	0.45	2	0.38	0.8934	0.02 to 22.631
Suspected bacteremia	4	1.79	3	0.58	0.1136	0.532 to 21.447
CR-UEDVT	2	0.90	8	1.54	0.4982	0.061 to 2.952
MARSI	0	0.00	2	0.38	0.3569	0 to 12.546
Migration of distal tip	1	0.45	0	0.00	0.1248	
Occlusion	3	1.35	13	2.50	0.3341	0.099 to 1.979
Pulmonary embolism	0	0.00	1	0.19	0.5147	0 to 91.895
Reinsertion	10	4.49	10	1.92	0.0482	0.880 to 6.309
Total	40	0.45	76			



Nurses comments : Pros

- “Dressing change is so much easier”
- “How come they did not put a SecurAcath® in Angio. Come and place one. NOW!”
- “Love this”





Removal - Help

- 5 difficult cases in 2 years
 - Device not cut completely in two parts
 - ED physician said: “I will call surgery”
 - Tips with important granulation:
 - Use NS to soften the granulation tissue prior to removal
 - Remove rapidly
 - Use Lidocain



Financial impact

TABLE II - Cost comparison between adhesive stabilization and subcutaneously anchored sutureless device (SAS)

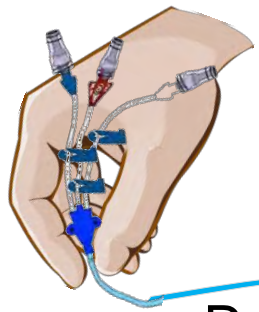
	SAS	Adhesive stabilization device
Maintenance performed	709	709
No. devices used	30	709
Device cost (€)	30	6
Stabilization total cost (€)	900	4.254
SAS savings (€)	3.354	



Financial impact in MUHC

- Cost of insertion
- Cost of reinsertion
 - 4.49/1000 CD vs 1.92/1000 CD

	No device	SecurAcath®
Insertion	138.50\$	168.50\$
Including reinsertion cost	177.97\$	189.47\$
Difference	+ 11.50\$/insertion	



Financial impact in MUHC

Does not consider :

- 1) Nursing time for dressing change,
- 2) Reinsertion waiting time and time of other HCPs
- 3) Treatment of complications
- 4) Unlike Zerla study, we do not use a securement device (+33\$/ 8 changes)



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Thank you!

