



V Convegno Nazionale
GAVePed
2023 RIMINI
15-16 Maggio



Secure & protect

La colla in cianoacrilato per cateteri ombelicali e epicutaneo cavali

Vito D'Andrea



VAD failure rate

- 25% per i CVC; 30-40% per AVP
- Ciò è legato a:
 - Occlusione
 - Dislocazione
 - Rottura
 - Stravasamento
 - Flebite
 - Trombosi
 - Leakege
 - Infezione sistemica

McGee and Gould, 2003; Bolton, 2010; Rickard et al, 2010; Chopra et al, 2013; Ullman et al, 2015

VAD failure rate

AVP	%	CVC	%
Flebite	14,7-16,1	Infezione	0,4 -4,1 per 1000 GC
Infiltrazione	15,7-33,8	Migrazione	4,2
Infezione	0,18	Trombosi	1-5
Occlusione	2,5- 32,7	Occlusioni	2,4-7,4
Dislocazione	3,7-50	Complicanze al sito di inserzione	7-24

Cyanoacrylate tissue adhesive: a new tool for the vascular access toolbox. Jackie Nicholson. British Journal of Nursing, 2019

Il fissaggio ideale:

- Ridurre i movimenti dell'accesso vascolare all'interno del vaso (pistoning; "in and out")
- Ridurre i movimenti dell'accesso vascolare all'esterno (mantenendolo nella vena)
- Fornire una barriera alla contaminazione batterica
- Facilitare la traspirazione della cute (alto MVTR specie nel neonato pretermine)
- Prevenire il sanguinamento
- Garantire una chiara e semplice valutazione del sito di inserzione
- Minimizzare il trauma sulla cute
- Essere confortevole
- Poco costoso
- Facile da applicare

La colla: cianoacrilato

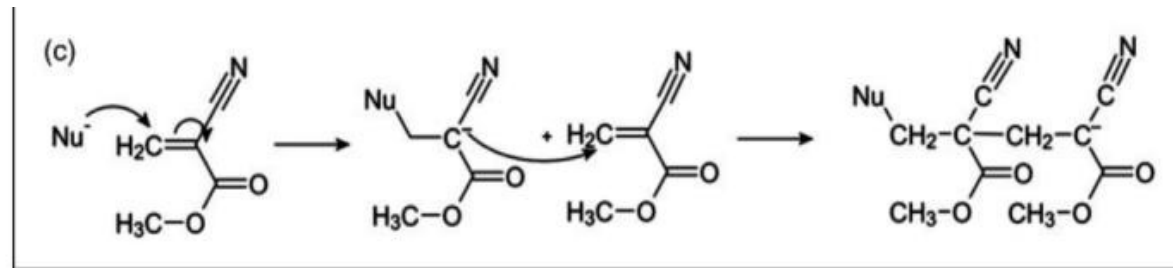


Figure 2. Molecular structure of cyanoacrylate and the polymerization process (adapted from Pollak and White¹⁸). (a) Monomeric cyanoacrylate $\text{CH}_2=\text{C}(\text{CN})-\text{COOR}$. The R represents an alkyl group. (b) *n*-Butyl-2-cyanoacrylate (*n*-BCA). The carboxyl ethyl ($-\text{COOH}-\text{CH}_2-\text{CH}_2$) group is the antigenic component of the molecule. (c) Polymerization process of cyanoacrylate (CA). Exposure of CA monomers to an anion, such as the hydroxyl ($-\text{OH}$) group in water initiates the polymerization process with bonding of the ethylene units.

La polimerizzazione è una reazione esotermica. Durante la formazione del polimero si genera calore con temperature che possono arrivare anche a 40-45°C

La colla: cianoacrilato

- Possiede un'alta resistenza alla trazione (tensile strength)
- Stabilizza il catetere riducendo i movimenti "in and out"
- Potenzialmente reduce il danno endoteliale e il rischio di trombosi
- Sigilla il sito di inserzione prevenendo il sanguinamento e l'ingresso dei microrganismi (colonizzazione extraluminale)
- Proprietà batteriostatica

Cyanoacrylate tissue adhesives for securement have been studied in vitro, in animals, and in small pilot trials of peripheral venous and arterial catheters. Tissue adhesive plus a standard transparent dressing have shown a slight trend toward reduction in catheter failure with these adhesives in combination with a standard transparent membrane dressing; however, larger trials are needed to confirm these findings and identify patients for whom this might not be suitable.^{5,15-17} (III)

INS 2016

Tissue adhesive for vascular access devices: who, what, where and when? Amanda Corley. British Journal of Nursing, 2017

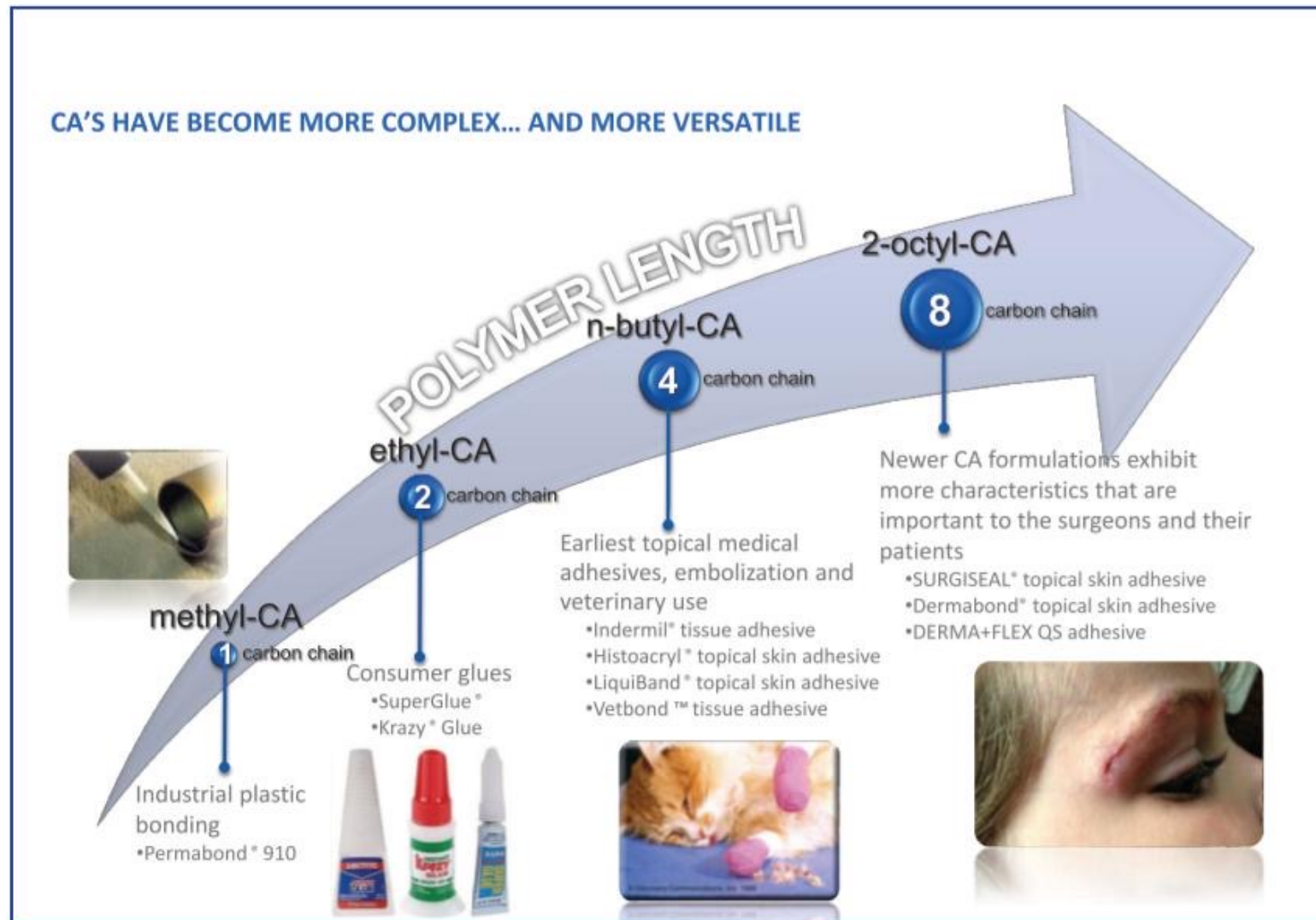


Figure 1. Cyanoacrylate development

Non tutte le colle sono uguali

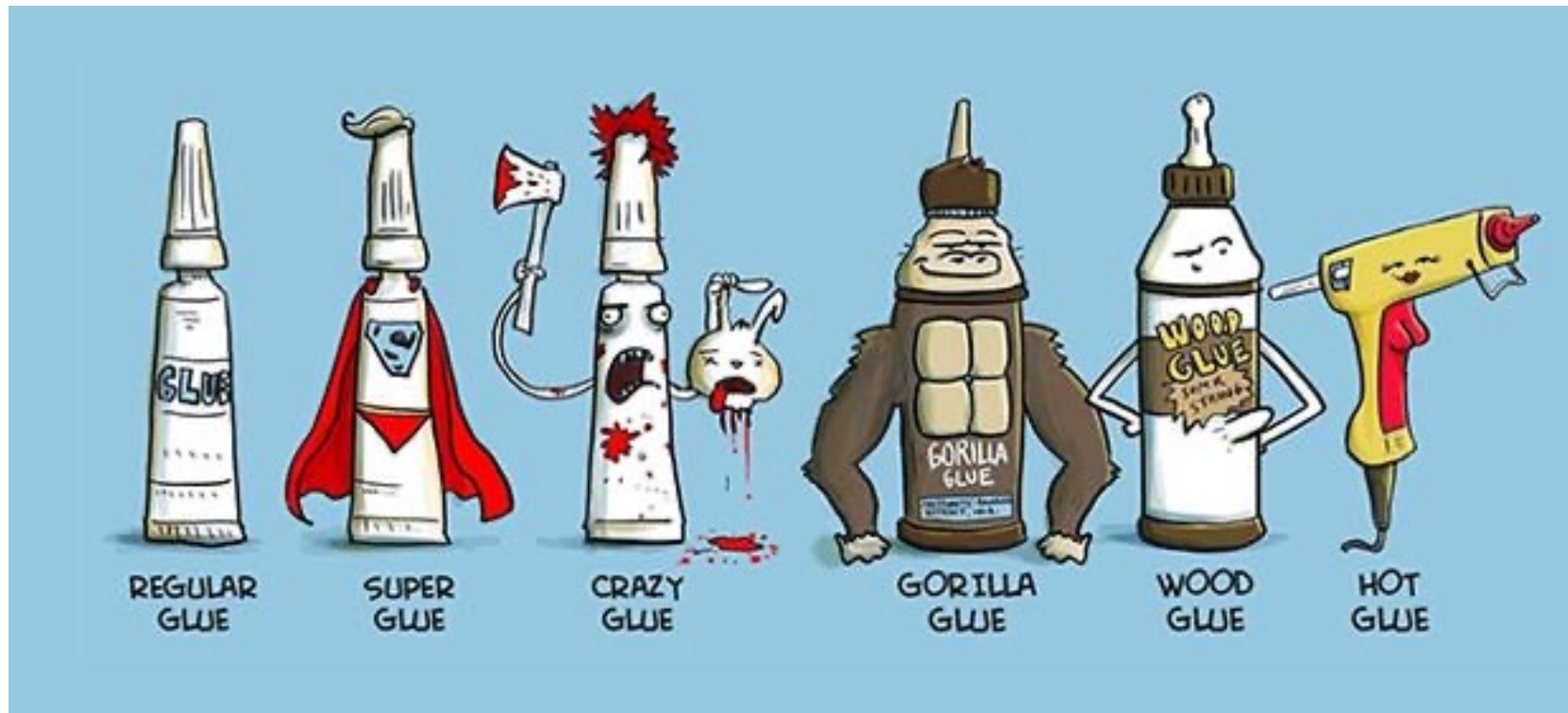


Table 1. Comparison of older and newer cyanoacrylate tissue adhesives

First generation	Second generation
Butyl-cyanoacrylate (BCA)	2-octyl-cyanoacrylate (OCA)
Quick drying	Longer drying time
Rigid/brittle	Higher tensile strength and more flexible
More cytotoxic	Less cytotoxic
Stronger thermal reaction	Reduced thermal reaction
Requires minimum 24 hours before fully water resistant	Immediately water resistant

Source: Internal testing by Adhezion Biomedical

Table 1. A selection of tissue adhesives used for skin closure or with vascular access devices*

Brand name (manufacturer)	Chemical constitution	Presentation (ml)	Storage (Celsius)	Time to degradation (days)	Properties
Histoacryl/Histoacryl Blue (B.Braun, Melsungen, Germany)	NBCA	0.5	< 22	7–10	■ High tensile strength ■ Microbial barrier ■ Quick setting time
Histoacryl Flexible (B.Braun, Melsungen, Germany)	NBCA + softener	0.5	< 25	7–10	■ High tensile strength ■ More flexible than NBCA ■ Less heat production on application ■ Microbial barrier
Dermabond (Ethicon, Somerville, NJ, USA)	OCA	0.36, 0.7	< 30	5–10	■ Higher tensile strength than NBCA ■ More flexible than NBCA ■ Microbial barrier
Surgiseal/SecurePortIV (Adhezion Biomedical, Wyomissing, PA, USA)	OCA	0.35, 0.5 (Surgiseal) 0.15 (SecurePortIV)	< 30	5–10	■ Higher tensile strength than NBCA ■ More flexible than NCBA ■ High moisture vapour transmission rate ■ Microbial barrier
Glubran Tiss2 (GEM, Viareggio, Italy)	NBCA + OCA	0.25, 0.35, 0.5	0–4	5–8	■ Improved flexibility ■ High tensile strength ■ Breathable ■ Less heat production on application ■ Microbial barrier
Indermil flexifuse (Connexicon, Dublin, Ireland)	NBCA + OCA	0.75	4–30	5–8	■ Flexibility ■ High tensile strength ■ Minimal heat produced ■ Microbial barrier

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Food and Drug Administration

Indications for Use

Form Approved: OMB No. 0910-0120
Expiration Date: January 31, 2017
See PRA Statement below.

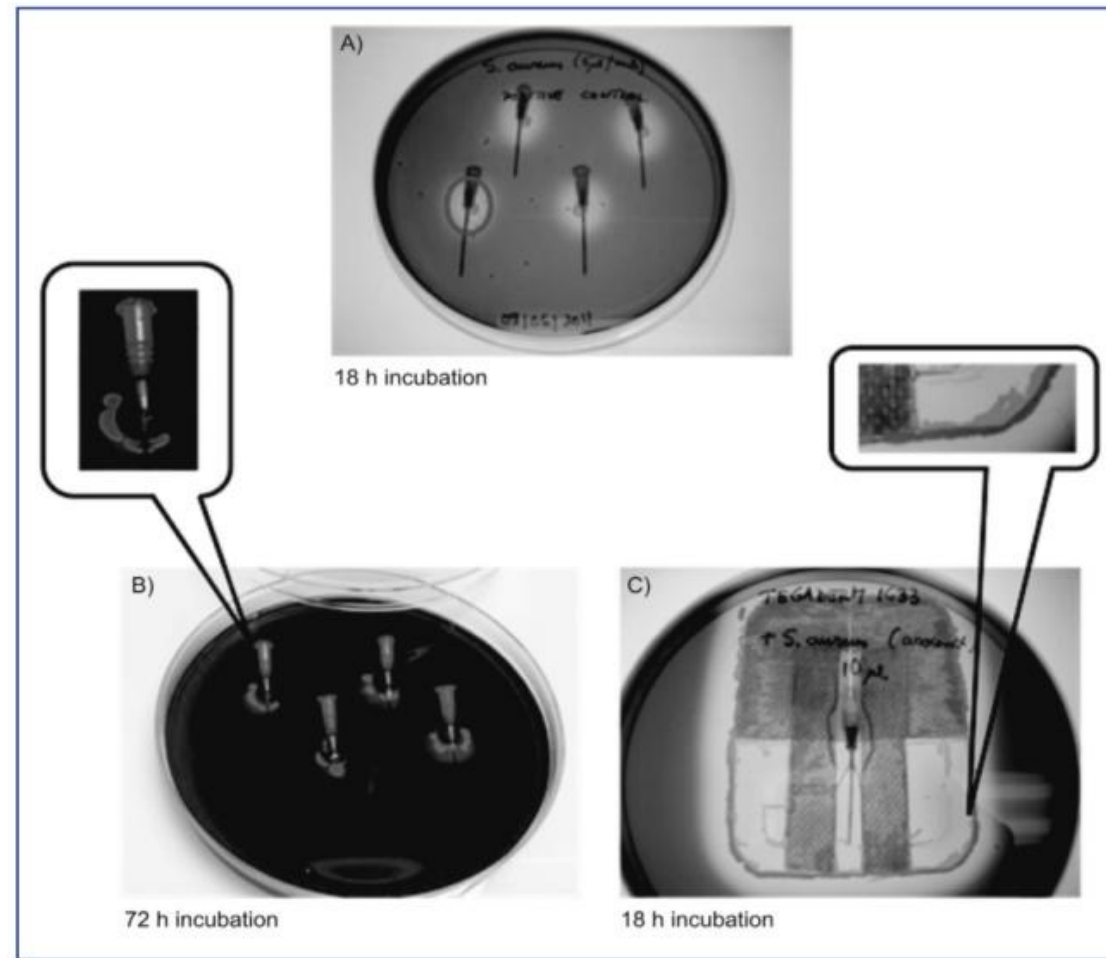
510(k) Number (*if known*)
K170505

Device Name
SecurePortIV Catheter Securement Adhesive

Indications for Use (*Describe*)

SecurePortIV™ catheter securement adhesive is to be applied as a film forming securement and sealant at the point of vascular access catheter skin entry. The film holds the catheter to the skin to reduce catheter movement, migration, and/or dislodgment. It is used to protect the catheter skin entry site by creating a sealant that immobilizes surface bacteria, preventing them from entering into the catheter skin entry site while also providing a moisture barrier. SecurePortIV™ is intended to be used with a transparent film dressing on short-term and long-term vascular access catheters including peripheral IVs, PICCs, and CVCs.

Azione antibatterica...BCA



Simonova G. Cyanoacrylate tissue adhesives—effective securement technique for intravascular catheters: in vitro testing of safety and feasibility. *Anaesth Intensive Care*. 2012;40(3):460–466

Azione antibatterica...BCA

Table 1 Diameters of bacterial growth around the Histoacryl® adhesive.

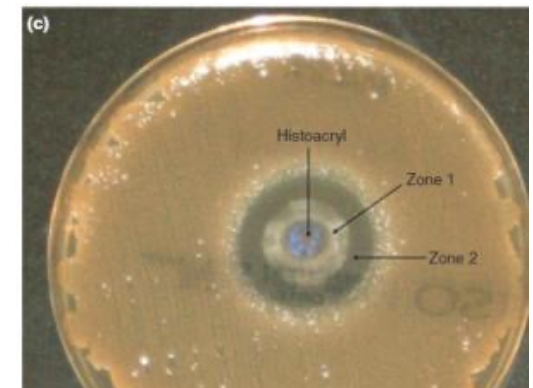
Organism	Mean drop diameter: mm	Mean zone 1 diameter: mm	Mean zone 2 diameter: mm
<i>Candida albicans</i>	5	13	0
<i>Enterococcus faecalis</i>	5	14	23
<i>Escherichia coli</i>	5	12	0
MRSA	5	13	21
MSSA	6	14	27
<i>Pseudomonas aeruginosa</i>	5	11	0
<i>Streptococcus pneumoniae</i>	6	11	23
Coagulase negative staphylococcus	5	13	21

called zone 2 (Fig. 6b). For each organism, cultured, the actual and mean diameters of the Histoacryl® droplets were recorded, along with actual and mean diameters of zone 1 and zone 2 (Table 1). Histoacryl® showed a spe-

cific inhibitory effect on all of the Gram positive organisms, but not the Gram negative organisms or *Candida albicans*. We found that Histoacryl® skin adhesive has a specific inhibitory effect on all the gram positive organisms we tested.

It is particularly encouraging that this effect is seen against MRSA (Fig. 6c), an often difficult to treat cause of hospital acquired infection.

Histoacryl® skin adhesive provides a reliable method of epidural catheter fixation, and reduces fall out rates [3]. It is encouraging to know that this substance, when applied to the skin entry site may reduce the incidence of bacterial colonisation of the catheter, potentially reducing epidural catheter related infection and abscess formation, and may allow the catheter to be used for longer. A clinical trial to demonstrate this effect would probably be unfeasible given the rarity of epidural abscess as a complication of epidural analgesia; however this would be a useful area for future research.



Wilkinson JN, Chikhani M, Mortimer K, Gill SJ.
The antimicrobial effect of Histoacryl® skin adhesive. *Anaesthesia*. 2008;63(12):1382–1384.

Azione antibatterica...OCA

Table 1

Antibacterial effect of the uninitiated product after a 3-minute contact time: detailed results versus *Pseudomonas aeruginosa*

Replicate No.	Log 10 survivors	Log 10 reduction	Neutralization challenge
1-19	0	8 - 0 = 8	+
20	1.48 = 1	8 - 1 = 7	+

P aeruginosa versus negative control

Dilution	Count
10 ⁻⁴	TNTC, TNTC
10 ⁻⁵	>200, >200
10 ⁻⁶	27, 58
10 ⁻⁷	5, 3
cfu/10 mL	4.3 × 10 ⁷
Log 10	7.63 = 8
Summary of kill against 7 clinically relevant organisms	Average (n = 20) log 10 reduction
Methicillin-resistant <i>Staphylococcus aureus</i>	8
<i>Escherichia coli</i>	8
<i>P aeruginosa</i>	8
<i>Klebsiella pneumoniae</i>	7
<i>Staphylococcus epidermidis</i>	7
<i>Corynebacterium pseudodiphtheriticum</i>	8
<i>Staphylococcus aureus</i>	8

NOTE. The filtrates were also plated and had no growth. The results for all organisms were equivalent as shown above. On challenge with <100 cfu, all dilution tubes were positive, meaning no carryover residual cyanoacrylate was present in the dilution tubes. The results for all the eight organisms tested were equivalent having ≥7 log kill.

+, positive; cfu, colony forming units; TNTC, too numerous to count.



Prince D, Solanki Z, Varughese R, Mastej J, Prince D. Antibacterial effect and proposed mechanism of action of a topical surgical adhesive. Am J Infect Control. 2017.

Azione emostatica

- Incidenza di sanguinamento nel posizionamento dei PICC: 40% ad 1 h, e 15% a 25 h.
- L'uso costante della colla in cianoacrilato abbatte l'incidenza di sanguinamento (0%) ad 1 e 25 h dal posizionamento del CVC
- Questo ha un notevole impatto logistico e sui pazienti.



Elimination of the 24-hour dressing: a quick win

be inspected. It is, however, common practice to apply gauze over the insertion site initially to absorb any post-insertion bleeding. A 24-hour, post-insertion dressing would then be applied (Royal College of Nursing, 2016). By using tissue adhesive, it is possible to eliminate the need for this 24-hour, post-insertion dressing as haemostasis can be achieved before the transparent film dressing is applied.

A Revolutionary, Proven Solution to Vascular Access Concerns: A Review of the Advantageous Properties and Benefits of Catheter Securement Cyanoacrylate Adhesives

Sheng Zhang, PhD • Bethany S. Lingle, BS • Shannon Phelps, BS

Catheter type	Securement method	Securement strength (N)
BD Autoguard catheter	CSCAs	12.473
	Tegaderm 1683	8.283
	Opsite	3.216
	HubGuard	2.905
	Durapore	3.381
BD Nexiva catheter	CSCAs	13.380
	Tegaderm 9525HP	7.090
	Opsite	1.392
	HubGuard	1.552
	Durapore	1.348
Abbreviations: CSCAs, catheter securement cyanoacrylate adhesives; N, newton.		

Catheter Type	Securement Method	Securement Strength (N)
BD Autoguard catheter	CSCAs + Tegaderm 1683	19.501
	CSCAs + Opsite	15.453
	CSCAs + HubGuard	12.451
	CSCAs + Durapore	12.362
BD Nexiva catheters	CSCAs + Tegaderm 9525HP	14.893
	CSCAs + Opsite	16.000
	CSCAs + HubGuard	10.840
	CSCAs + Durapore	15.035
Abbreviations: CSCAs, catheter securement cyanoacrylate adhesives; N, newton.		

....e nel neonato???

ECC

CVO



30th Annual Meeting of
**THE EUROPEAN SOCIETY OF
PAEDIATRIC AND NEONATAL
INTENSIVE CARE**

June 18-21, 2019, Salzburg, Austria



USE OF CYANOACRYLATE GLUE FOR THE SUTURELESS SECUREMENT OF EPICUTANEO-CAVAL CATHETERS IN NEONATES.

Giovanni Barone¹, Vito D'Andrea², Giovanni Vento², Lucilla Pezza², Mauro Pittiruti²;

¹Rimini/IT, ²Rome/IT

Use of cyanoacrylate glue for the sutureless securement of epicutaneo-caval catheters in neonates

**Vito D'Andrea¹ , Lucilla Pezza¹, Giovanni Barone²,
Giorgia Prontera¹, Mauro Pittiruti³  and Giovanni Vento¹**

The Journal of Vascular Access

1–4

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DOI: 10.1177/11297298211008103

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- Popolazione: neonati a termine e pretermine ricoverati in TIN
- Periodo di studio: Gennaio 2018- Dicembre 2018
- Tipo di studio: caso controllo con Gruppo di controllo storico
- Neonati trattati: cateteri ECC fissati con BCA e membrana semipermeabile trasparente
- Gruppo di controllo: Anno 2017 cateteri ECC fissati con steri-strips e membrana semipermeabile trasparente



Use of cyanoacrylate glue for the sutureless securement of epicutaneo-caval catheters in neonates

The Journal of Vascular Access
1–4
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Vito D'Andrea¹ , Lucilla Pezza¹, Giovanni Barone²,
Giorgia Prontera¹, Mauro Pittiruti³  and Giovanni Vento¹

Table 1. Demographics population and Epicutaneo-Caval Catheters characteristics.

	Intervention 134	Control 124	
Infants (<i>n</i>)	92	80	
Gestational age weeks	29	29	
Birth weight grams	1280	1200	
Catheters (<i>n</i>)	134	124	
Day of life at the insertion	6	6	
Weight at insertion gramms	1230 (520–3000)	1180 (480–3270)	
Days ECC in place	10.4	11	
Elective ECC removal <i>n</i> (%)	95 (70.8)	89 (71.7)	
Dislodgement <i>n</i> (%)	1 (0.7)	14 (11.3)	0.0003

Use of cyanoacrylate glue for the sutureless securement of epicutaneo-caval catheters in neonates

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Vito D'Andrea¹ , Lucilla Pezza¹, Giovanni Barone²,
Giorgia Prontera¹, Mauro Pittiruti³  and Giovanni Vento¹

- L'uso della colla non è stato associato ad alcun effetto avverso.
- La colla si è dimostrata sicura, facile da applicare e efficace nel 100% dei casi nel prevenire sanguinamenti nel sito di venipuntura.
- La rimozione si è dimostrata semplice e senza complicanze.

Cyanoacrylate Securement in Neonatal PICC Use

A 4-Year Observational Study Van Rens, Adv Neonat Care 2022

- 1842 ECC
- 2017-2018: NO CA glue vs. 2019-2020: CA glue
- GA: 29.6 ± 4wks

TABLE 3. Reasons for Device Removal, Dwell Time, and Therapy Failure

	Tissue Adhesive			P Value
	Total (N = 1842) n (%)	No (n = 975) n (%)	Yes (n = 867) n (%)	
Reason for removal				
1. Therapy completed	1313 (71.3)	637 (65.3)	676 (78.0)	<.001
2. Therapy failure ^a				
Catheter-related complications ^b	43 (2.3)	24 (2.5)	19 (2.2)	
Extravasation/infiltration	50 (2.7)	47 (4.8)	3 (0.3)	
Maintenance-related complications ^c	75 (4.1)	53 (5.4)	22 (2.5)	
Phlebitis	56 (3.0)	42 (4.3)	14 (1.6)	
Suspected sepsis	118 (6.4)	87 (8.9)	31 (3.6)	
Death (CLABSI)	8 (0.4)	6 (0.6)	2 (0.2)	
3. Administrative censoring				
Death (other causes)	44 (2.4)	31 (3.2)	13 (1.5)	
Transferred	135 (7.3)	48 (4.9)	87 (10.0)	
Dwell time, median, (IQR), d	11 (7-16)	11 (7-17)	10 (7-14)	.074
Therapy failure ^a	350 (20.5)	259 (27.9)	91 (11.7)	<.001

TABLE 5. Effects of Catheter Securement on Device Failure and CLABSI

	Tissue Adhesive		P Value
	No	Yes	
Effect of catheter securement on therapy failure			
Crude HR	Reference	0.42 (95% CI 0.33-0.54)	→ <.001
Adjusted HR ^a	Reference	0.61 (95% CI 0.44-0.85)	→ .003
Adjusted HR ^b	Reference	0.56 (95% CI 0.41-0.79)	→ .001
Incidence rate (per 1000 catheter days)			
Suspected sepsis	87 (6.01; 95% CI 4.81-7.41)	31 (2.38; 95% CI 1.62-3.38)	→ <.001
CLABSI	40 (2.76; 95% CI 1.97-3.76)	13 (0.99; 95% CI 0.53-1.71)	→ <.001
Effect of catheter securement on CLABSI			
Crude HR	Reference	0.35 (95% CI 0.19-0.67)	→ .001
Adjusted HR ^a	Reference	0.42 (95% CI 0.17-1.06)	.06
Adjusted HR ^b	Reference	0.50 (95% CI 0.19-1.31)	.159
Abbreviations: CI, confidence interval; CLABSI, central line-associated bloodstream infection; HR, hazard ratio.			
^a Adjusted for catheter type only (antimicrobial or nonantimicrobial).			
^b Adjusted for patient characteristics: age from birth (days), gestational age (at birth), actual birth weight, and type of catheter.			

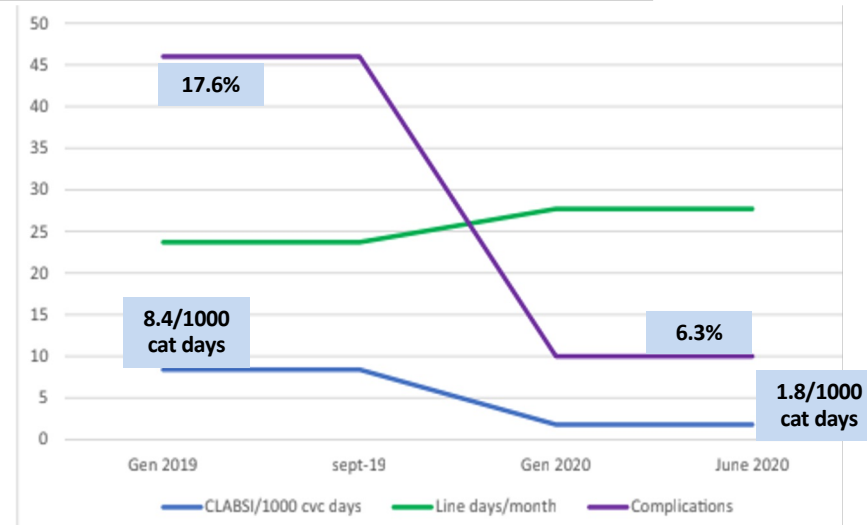
Implications for Practice and Research: In parallel with currently published international literature, this study's findings support catheter securement with an octyl-based tissue adhesive in use with central venous catheters. When device stabilization is most pertinent, securement with tissue adhesive is a safe and effective method for long-term vascular access among the neonatal population.

How to minimize central line-associated bloodstream infections in a neonatal intensive care unit: a quality improvement intervention based on a retrospective analysis and the adoption of an evidence-based bundle

- 258 vs.159 UVC-ECC-CICC
- Mean GA 33 wks

Table 3 Differences between the old bundles and the new bundles that were introduced in the second period of the study

	Old "bundle"	New "bundle"
Hand hygiene		Increased educational sessions to enhance adherence to correct hand hygiene
Central line material and dressing care	Old-generation 2-piece epicutaneo-cava catheters (silicone) Non-transparent dressing "Bridge" for UVC Sutures for CICC, non-transparent dressing	New single-piece polyurethane catheters Cyanoacrylate glue Occlusive transparent dressing Sterile transparent dressing Stat-lock, glue, and transparent dressing
Drug preparation and administration	No sterile preparation of drugs No disinfection caps	Sterile gloves and masks obligatory Disinfection caps
Prompt timely catheter removal	Catheter removed when enteral feeds reached 140-150 ml/kg/day	Catheter removed when enteral feeds reached 120 ml/kg/day
Creation of an effective checklist	No checklists available	Checklists created
Specialized team	No dedicated team	Dedicated team Educational sessions



NO ADVERSE EVENTS

$P < 0.007$

$P = 0.02$

Infection Control & Hospital Epidemiology (2023), 1–15

doi:[10.1017/ice.2022.53](https://doi.org/10.1017/ice.2022.53)

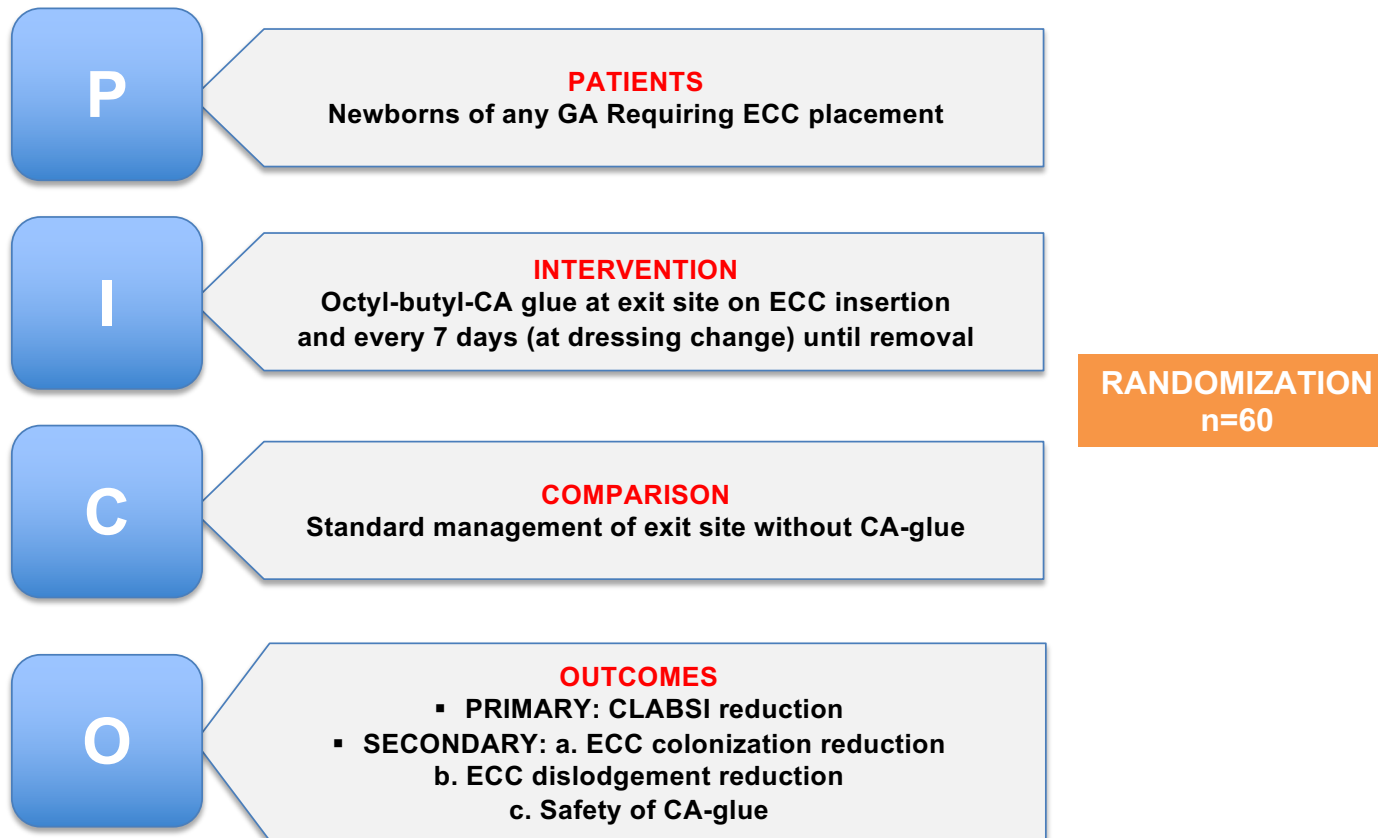


SHEA White Paper

**SHEA Neonatal Intensive Care Unit (NICU) White Paper Series:
Practical approaches for the prevention of central-line–associated
bloodstream infections**

NEO-GLUE STUDY: ONGOING

“La colla in cianoacrilato per la riduzione delle CLABSI in TIN: studio pilota randomizzato controllato: NEO-GLUE study”



....e nel neonato???

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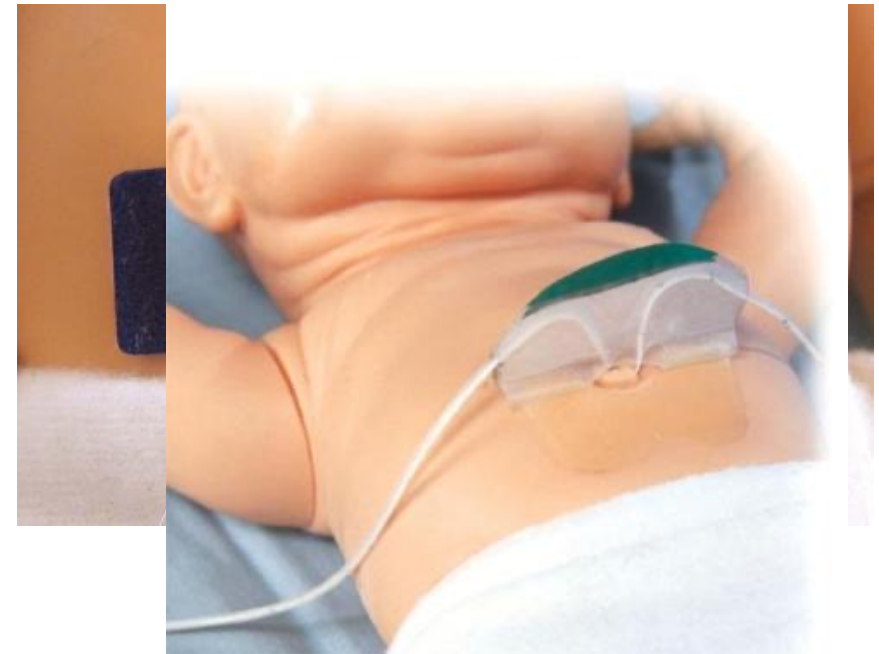
“Can we do it better?”...fissaggio CVO

Jacqueline McGrath, PhD, RN, FNAP, FAAN ○ Section Editor

Evidence-Based Practice Briefs

TABLE. Comparison of Umbilical Cord–Securing Techniques Based on Discussion of Advantages Versus Disadvantages

Technique	Advantages	Disadvantages	Price
1. Anchoring (with or without stitching)	No adhesives on skin.	Pain at umbilical site.	Negligible
2. Goal post or bridging	Potentially anchored more securely.	Skin irritation and infection. Catheter adjustments may require new goal post.	Negligible
3. DuoDERM method	Quick securing of umbilical cord lines.	Skin irritation and infection. Not ideal for infants requiring ultrasound of abdomen or heart.	~\$5 DuoDERM and < \$1 for Tegaderm
4. NeoBridge by Neotech Products	Hydrocolloid gel secured to abdomen. Adjustable flaps allow easy catheter adjustments.	Expensive. Skin irritation and infection.	\$8 to \$10/NeoBridge



“Can we do it better?” ...tip check and re-check

- La migrazione del catetere è descritta soprattutto nelle prime 24-48 ore
- La gelatina di Wharton si essicca e il moncone ombelicale si accorcia
- 65 Neonati con cateteri fissati con punto + NeoBridge

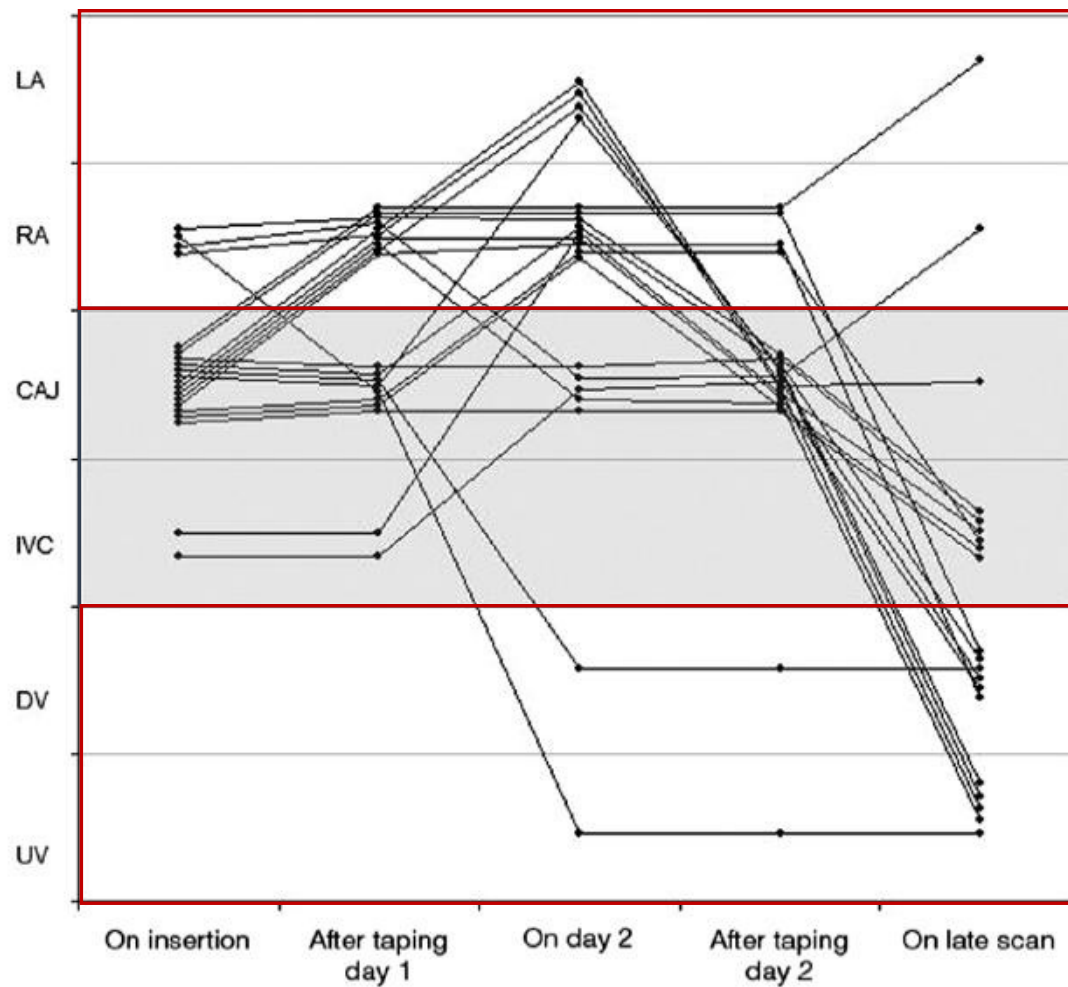
Table 1 Ultrasound findings of catheter tip position

	First ultrasound, n=65	Second ultrasound, n=52	Third ultrasound, n=42	Fourth ultrasound, n=24
Good position, n (%)	25 (38.5)	40 (77)	24 (57)	13 (54.2)
Malposition, n (%)	40 (61.5)	12 (23)	18 (43)	11 (45.8)
Right atrium, n (%)	17 (26.2)	6 (11.5)	9 (21)	1 (4.2)
Foramen ovale, n (%)	6 (9.2)	1 (2)	2 (5)	2 (8.3)
Left atrium, n (%)	15 (23.1)	3 (5.7)	–	1 (4.2)
Hepatic vessels, n (%)	2 (3)	2 (3.8)	7 (17)	7 (29.1)
Migration rate, n (%)	–	9 (17)	13 (31)	7 (29.1)

- 29/58 (50%) dei neonati hanno nel complesso avuto fenomeni di migrazione
- Solo il 50% dei neonate avevano un CVO normoposizionato alla fine dello studio

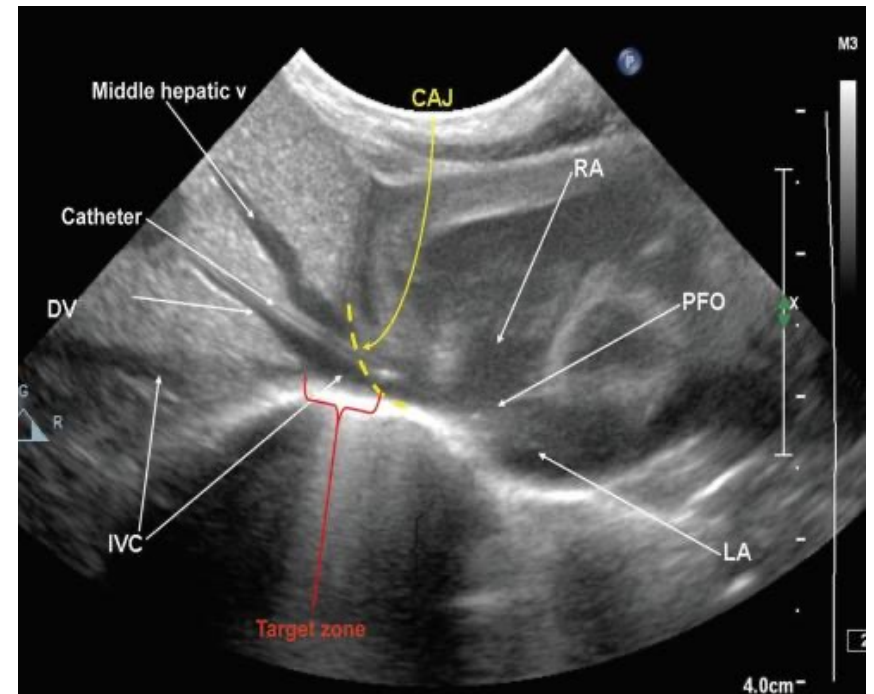
“Can we do it better?”...fissaggio CVO





- Retrazione cordone
- Espansione polmonare
- Distensione addominale
- Management CVO

GLUUV Trial

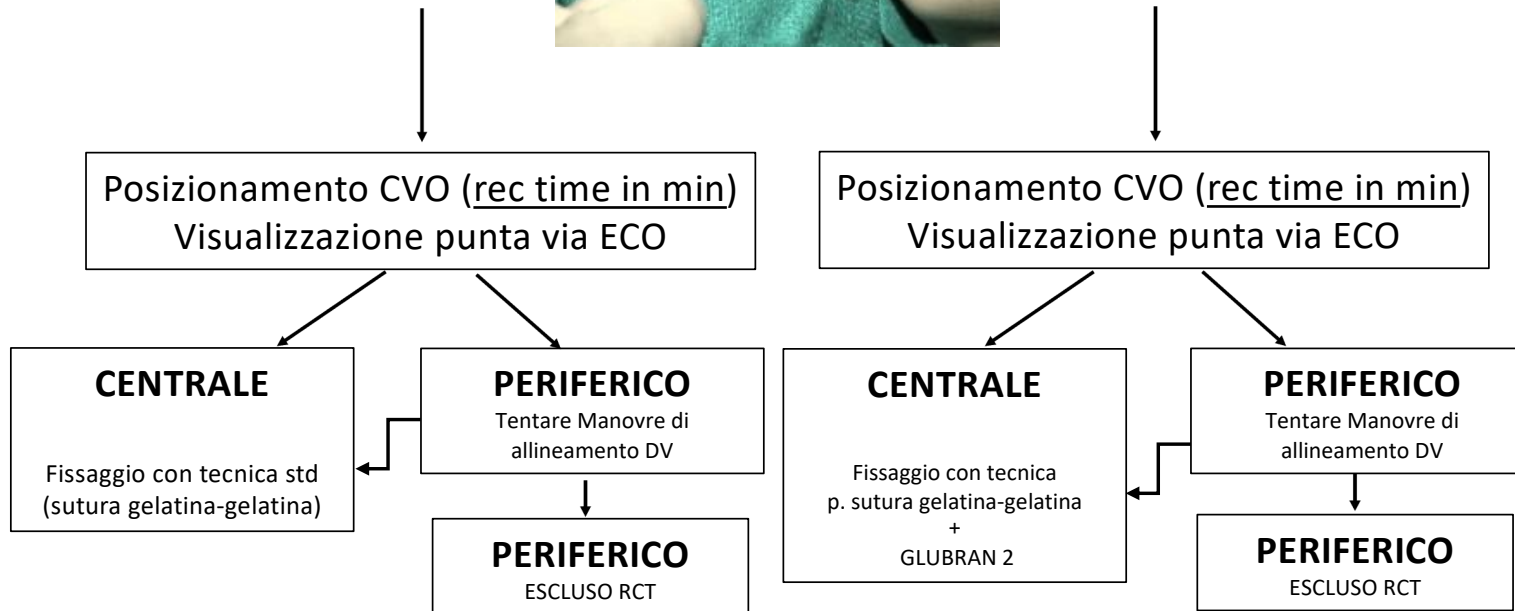


GLUV Trial



CONTROLLO

INTERVENTO



Controlli ecografici per la visualizzazione della punta del catetere:

T1 → tra 24 e 48 ore dal posizionamento

T2 → tra 72 e 96 ore

PRERIMOZIONE

Ecografia colorDoppler a 2 settimane dal posizionamento

Dislocazione

	Total	S-group	SG-group	P
Dislodgments at T1	16/130 (12.3%)	15/65 (23.1%)	1/65 (1.5%)	<0.001
- inwards - outwards	2 (1.5%) 14 (10.8%)	2 (3.1%) 13 (20%)	- 1 (1.5%)	0.22 0.003
Dislodged UVC at T1:	16	15	1	
Unacceptable site				
- intracardiac* - intrahepatic** - extra-abdomen***	3 7 2	2 7 2	1 - -	
Acceptable site	4	4	-	
Dislodgments at T2 §	5/127 (3.9%)	1/63 (1.6%)	4/64 (6.2%)	0.37
- inwards - outwards	1 (0.8%) 4 (3.1%)	1 (1.6%) -	- 4 (6.2%)	1 0.05
Dislodged UVC at T2:	5	1	4	
Unacceptable site				
- intracardiac* - intrahepatic**	1 4	1 -	- 4	
Dislodgments at T3	0	0	0	-
Overall dislodgments	21/130 (16.1%)	16/65 (24.6%)	5/65 (7.7%)	0.016
- inwards - outwards	3 (2.3%) 18 (13.8%)	3 (4.6%) 13 (20%)	- 5 (7.7%)	- 0.27

Migrazione

	Total	S-group	SG-group
Tip migration in UVCs without dislodgment (n=109)	13/109 (11.9%)	6/49 (12.2%)	7/60 (11.7%)
Tip location by ultrasound			
• intracardiac	9 (8.3%)	5 (10.2%)	4 (6.6%)
• intrahepatic	4 (3.7%)	1 (2%)	3 (5%)
Tip migration in all UVCs (n=130)	31/130 (23.8%)	19/65 (29.2%)	12/65 (18.5%)
Tip location by ultrasound			
• intracardiac	12 (9.2%)	8 (12.3%)	4 (6.2%)
• intrahepatic	19 (14.6%)	11 (8.5%)	8 (12.3%)

INS 21

Standard 38 – Vascular Access Securement (Gorski et al., 2021, pp. S108-S111)

This standard indicates that ALL vascular access devices (VADs) should be secured to prevent complications associated with movement at the insertion site and unintentional loss of access. The standard also recommends that the securement technology not interfere with the ability to routinely assess and monitor the access site.

- **Tissue adhesive** is listed as one of the four approved securement technologies (Level I).
- All securement devices are seen as an adjunct to the primary dressing. The effectiveness of combining securement technologies is still unclear.
- **Tissue adhesive** in addition to the primary dressing for peripheral IV's (PIVCs) is recommended to improve catheter dwell times and decrease failure rates (Level II). Use a securement technology for long PIVCs and midline catheters (Committee Consensus).
- Use of **tissue adhesive** as an alternative to sutures for PICCs is considered to be a safer alternative and reduce risks of complications, including infection and dislodgement (Level I).
- Consider the benefits of **tissue adhesive** as an adjunct to the primary method of dressing and securement to provide immediate hemostasis at the insertion site, which can prolong intervals between dressing changes (Level II).
- **Tissue adhesive** has been demonstrated to create a barrier to microorganism growth in the catheter tip (Level II).
- Tissue adhesive along with sutures or other securement technologies may reduce failure rates with nontunneled CVADs in the neck and groin (Level III).
- Tissue adhesive should be reapplied at each dressing change (Level I).
- Dressings should be changed at least every 7 days, or immediately if dressing integrity is observed e.g., visibly soiled, presence of moisture, drainage, or blood (Level III).
- **TA** has shown promising effects in promoting hemostasis post-VAD insertion (Level III).



- Aiuta nella stabilizzazione dei CVC riducendo i movimenti “in and out”. Miglior sistema di fissazione dei CVC: Securacath + Colla+ MST
- Colla + MST sono mezzi di stabilizzazione sufficienti per i cateteri venosi periferici e per i CVC di tipo ECC in epoca neonatale.
- Sigilla il sito di inserzione prevenendo il sanguinamento ed eliminando la necessità di ripetere la medicazione a distanza di 24 ore.
- Sigilla il sito di inserzione con una proprietà batteriostatica intrinseca (potenzialmente riduce la colonizzazione extraluminale).
- Nessuna incidenza di lesioni cutanee riportate nel neonato, anche pretermine

[illegible]