

Gemelli



Fondazione Policlinico Universitario A. Gemelli
Università Cattolica del Sacro Cuore



ANNO 2023: QUALI NOVITÀ NEL CAMPO DEGLI ACCESSI VENOSI PEDIATRICI E NEONATALI?

MAURO PITTIRUTI

FONDAZIONE POLICLINICO UNIVERSITARIO 'A. GEMELLI'

ROMA



Gruppo Accessi Venosi Pediatrici



ERA IL 2017...



Pediatric Vascular Access Practice: Time for Evolution or Revolution?

By Amanda J Ullman RN, MAppSci, PhD, Centaur Fellow, Director-at-Large;
Association for Vascular Access Pediatric Special Interest Group, Senior Lecturer;
Alliance for Vascular Access Teaching and Research (AVATAR) Group, Griffith University

CINQUE ANNI DOPO...ABBIAMO LA RISPOSTA



Pediatric Vascular Access Practice: Time for Evolution or Revolution?

By Amanda J Ullman RN, MAppSci, PhD, Centaur Fellow, Director-at-Large;
Association for Vascular Access Pediatric Special Interest Group, Senior Lecturer;
Alliance for Vascular Access Teaching and Research (AVATAR) Group, Griffith University

UNA RIVOLUZIONE IN TUTTI I CAMPI

- INDICAZIONI ALL'ACCESSO VENOSO E SCELTA DEL DISPOSITIVO
- TECNICA DI IMPIANTO
- GESTIONE DEL DISPOSITIVO
- PROTOCOLLI DI INSERZIONE E GESTIONE
- PREVENZIONE E TRATTAMENTO DELLE COMPLICANZE
- EDUCAZIONE E TRAINING

INDICAZIONI ALL'ACCESSO VENOSO E SCELTA DEL DISPOSITIVO

UTILIZZARE ALGORITMI PER LA VERIFICA DELLA CORRETTA INDICAZIONE AL DISPOSITIVO

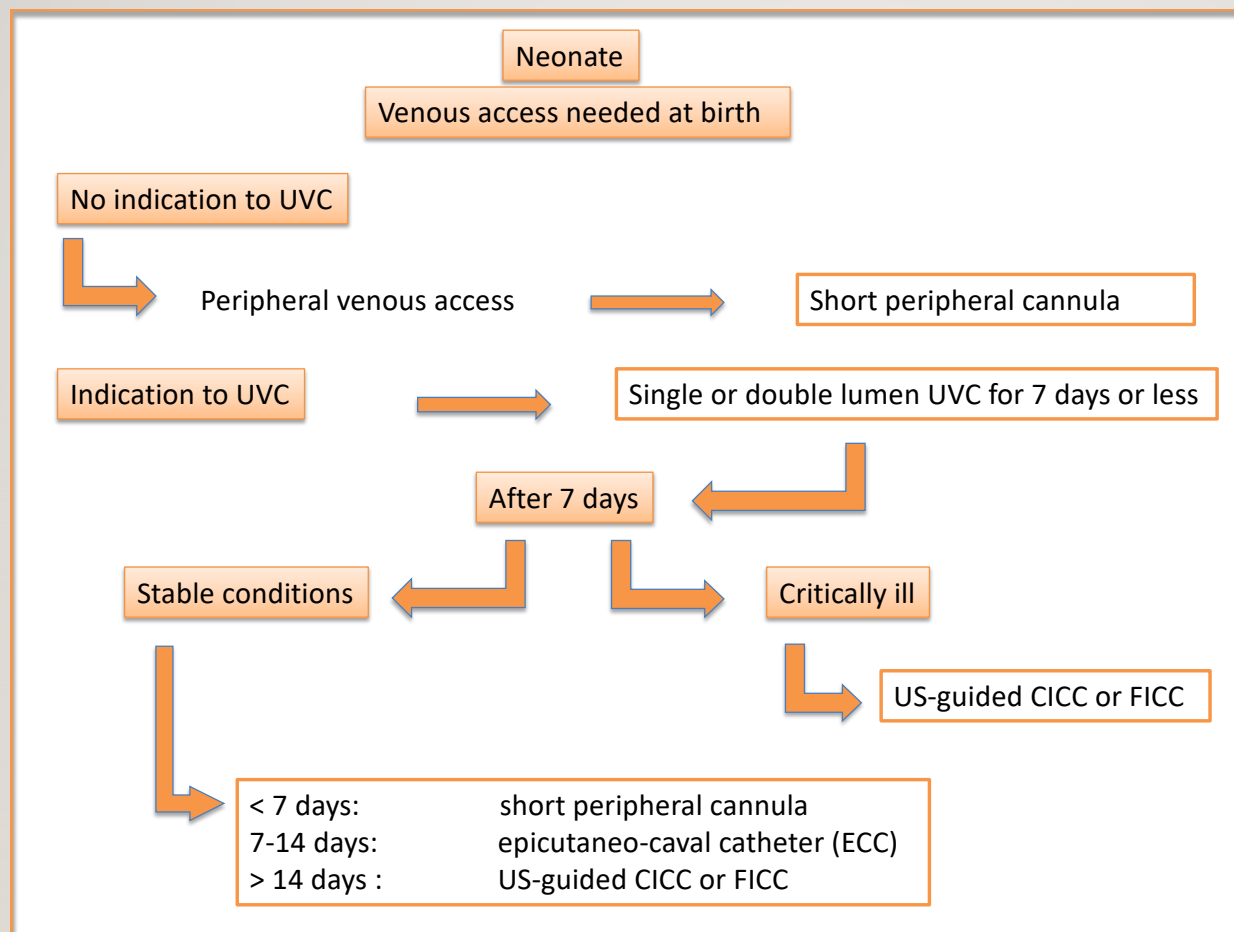


V Convegno Nazionale GAVePed



- Risultati della consensus GAVePed 2023 sulla scelta dell'accesso venoso nel neonato (15') - **Giovanni Barone**
- Risultati della consensus GAVePed 2023 sulla scelta dell'accesso venoso nel bambino (15') - **Alessandro Crocoli**

2018



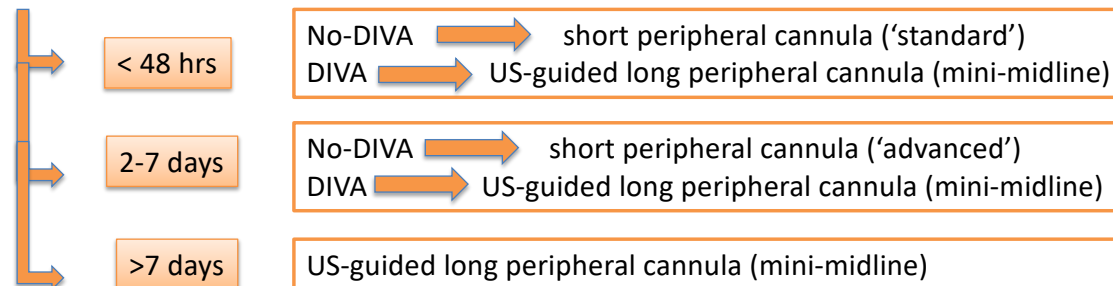
Nel neonato

2018

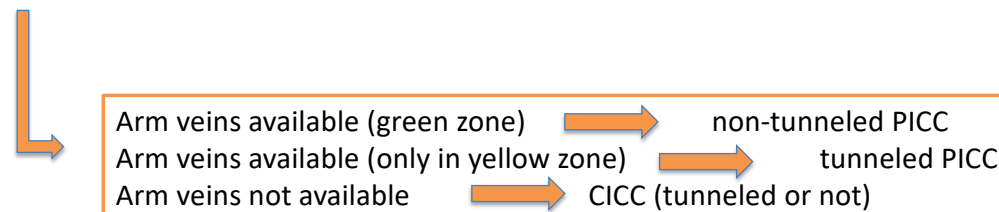
Children - Elective

Intra-hospital use

Peripheral access is appropriate



Central access is required



Nel bambino

In defense of the use of peripherally inserted central catheters in pediatric patients

Alessandro Crocoli¹ , Simone Cesaro² , Monica Cellini³,
Francesca Rossetti⁴, Luca Sidro⁵, Fulvio Pinelli⁶
and Mauro Pittiruti⁷ 

The Journal of Vascular Access
1-4

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DOI: 10.1177/1129729820936411

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PICC = prima opzione come accesso centrale nel bambino!

EDITORIAL



The neonatal DAV-expert algorithm: a GAVeCeLT/GAVePed consensus for the choice of the most appropriate venous access in newborns

Giovanni Barone¹ · Vito D'Andrea² · Gina Ancora¹ · Francesco Cresi³ · Luca Maggio⁴ · Antonella Capasso⁵ · Rossella Mastroianni⁶ · Nicola Pozzi⁷ · Carmen Rodriguez-Perez⁸ · Maria Grazia Romitti⁹ · Francesca Tota¹⁰ · Ferdinando Spagnuolo¹¹ · Francesco Raimondi⁵ · Mauro Pittiruti¹²

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CONSENSUS DAV EXPERT IN CORSO – ALGORITMO DI SCELTA DELL'ACCESSO VENOSO NEL BAMBINO

2023

Coordinamento: *Alessandro Crocoli, Mauro Pittiruti, Clelia Zanaboni*

Panel: *Maria Giuseppina Annetta - Michela Bevilacqua - Daniele G.Biasucci
Davide Celentano - Simone Cesaro - Antonio Chiaretti - Nicola Disma
Aldo Mancino – Cristina Martucci - Lidia Muscheri - Alessio Pini Prato
Alessandro Raffaele – Simone Reali - Francesca Rossetti
Giancarlo Scoppettuolo - Luca Sidro - Geremia Zito Marinosci*

SAPER SCEGLIERE IL MATERIALE



V Convegno Nazionale **GAVePed**



- Scelta del catetere epicutaneo-cavale (15') - **Carmen Rodriguez**
- Scelta del catetere venoso ombelicale (15') - **Nicola Pozzi**
- Dispositivi per accesso venoso periferico nel neonato (15') - **Maria Grazia Romitti**
- Dispositivi per accesso venoso periferico nel bambino: agocannule, cannule periferiche lunghe, cateteri midline (15') - **Simone Reali**
- PICC/CICC/FICC: la importanza della scelta di un dispositivo ad alta performance (15') - **Clelia Zanaboni**

Scelta dell'epicutaneo cavale (evitare il silicone!)

Editorial

JVA | The Journal of
Vascular Access

Epicutaneo-caval catheters in neonates: New insights and new suggestions from the recent literature

Giovanni Barone¹  and Mauro Pittiruti²

The Journal of Vascular Access
2020, Vol. 21(6) 805–809
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DOI: 10.1177/1129729819891546
journals.sagepub.com/home/jva



2019

Original research article

JVA | The Journal of
Vascular Access

Long peripheral catheters in neonates: filling the gap between short peripheral catheters and epicutaneous-caval catheters?

**Maria Grazia Romitti*^{ID}, Carmen Rodriguez Perez*^{ID},
Elena Pezzotti, Mario Motta^{ID} and Francesco Maria Risso**

The Journal of Vascular Access
1–6

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2021



2022

Umbilical Venous Catheter Update: A Narrative Review Including Ultrasound and Training

Vito D'Andrea^{1*}, Giorgia Prontera¹, Serena Antonia Rubortone¹, Lucilla Pezza¹, Giovanni Pinna¹, Giovanni Barone², Mauro Pittiruti³ and Giovanni Vento¹

¹ Division of Neonatology, Department of Woman and Child Health and Public Health, University Hospital Fondazione Policlinico Gemelli Istituto di Ricovero e Cura a Carattere Scientifico (IRCCS), Rome, Italy, ² Neonatal Intensive Care Unit, Infermi Hospital, Rimini, Italy, ³ Department of Surgery, University Hospital Fondazione Policlinico Gemelli Istituto di Ricovero e Cura a Carattere Scientifico (IRCCS), Rome, Italy

Diverse opzioni di accesso venoso periferico

Review

JVA | The Journal of
Vascular Access

European recommendations on the proper indication and use of peripheral venous access devices (the ERPIUP consensus): A WoCoVA project

The Journal of Vascular Access
1–18
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**Mauro Pittiruti¹ , Ton Van Boxtel² , Giancarlo Scoppettuolo¹,
Peter Carr³, Evangelos Konstantinou⁴, Gloria Ortiz Miluy⁵,
Massimo Lamperti⁶, Godelieve Alice Goossens⁷, Liz Simcock⁸,
Christian Dupont⁹, Sheila Inwood¹⁰, Sergio Bertoglio¹¹ , Jackie
Nicholson¹², Fulvio Pinelli¹³  and Gilda Pepe¹**

2021

Review

Vascular Access in Pediatric Oncology and Hematology: State of the Art

Alessandro Crocoli ¹, Cristina Martucci ^{1,*}, Giorgio Persano ¹, Maria Debora De Pasquale ², Annalisa Serra ², Antonella Accinni ¹, Ivan Pietro Aloï ¹, Arianna Bertocchini ¹, Simone Frediani ¹, Silvia Madafferì ¹, Valerio Pardi ¹ and Alessandro Inserra ¹

¹ General Surgery Department, Bambino Gesù Children's Hospital, IRCCS, 00165 Rome, Italy; alessandro.crocoli@opbg.net (A.C.); giorgio.persano@opbg.net (G.P.); antonella.accinni@opbg.net (A.A.); ivanpietro.aloi@opbg.net (I.P.A.); arianna.bertocchini@opbg.net (A.B.); simone.frediani@opbg.net (S.F.); silvia.madafferì@opbg.net (S.M.); valerio.pardi@opbg.net (V.P.); alessandro.inserra@opbg.net (A.I.)

² Paediatric Haematology/Oncology Cell and Gene Therapy Department, Bambino Gesù Children's Hospital, IRCCS, 00165 Rome, Italy; mdebora.depasquale@opbg.net (M.D.D.P.); annalisa.serra@opbg.net (A.S.)

* Correspondence: cristina.martucci@opbg.net; Tel.: +39-0668592155

Table 1. AIEOP Recommendations for VADs Positioning *.

-
- (1) A tunneled catheter is recommended for continuous use (A I)
 - (2) For discontinuous use, a totally implanted VAD is recommended (A II)
 - (3) It is recommended that the ratio of the catheter caliber to vein diameter should not exceed 1/3 (A II)
 - (4) Multiple lumen VADs should be inserted only in few selected patients, based on the intensity of care and on the therapeutic program (A)
 - (5) The choice of material must be based on high performance in terms of guaranteed flows and pressure resistance as well as device endurance (A II)
 - (6) Insertion by surgical venous cutdown is not recommended (A I)
 - (7) The ultrasound-guided technique represents the current standard for venipuncture and venous cannulation for insertion of VAD (A It)
 - (8) The use of cyanoacrylate tissue glue is recommended (A II)

UN PUNTO MOLTO CHIARO: ABBANDONARE I CATETERI IN SILICONE!

Svantaggi dei cateteri esterni in silicone rispetto a quelli in poliuretano:

- Più fragili
- Maggior rischio di rotture del tratto esterno
- Maggior rischio di kinking
- Maggior rischio di dislocazione
- Maggior rischio complicanze occlusive
- Più costosi

V Convegno Nazionale **GAVePed**



- Accesso venoso per circolazione extracorporea nel neonato (15') - **Daniele De Luca** (videoregistrazione)
- Cateteri venosi per emodialisi nel bambino (15')
- **Ugo Graziano**
- Accesso venoso periferico nel paziente pediatrico DIVA (15') - **Michela Bevilacqua**

> [Pediatr Nephrol](#). 2023 Jan 10. doi: 10.1007/s00467-022-05871-0. Online ahead of print.

CARPEDIEM® for continuous kidney replacement therapy in neonates and small infants: a French multicenter retrospective study

Jennifer Battista ¹, Daniele De Luca ², Sergio Eleni Dit Trolli ³, Lise Allard ⁴, Justine Bacchetta ⁵,
Nourredine Bouhamri ⁶, Carole Enoch ⁷, Camille Faudeux ¹, Julie Guichoux ⁸,
Etienne Javouhey ⁹, Karine Kolev ⁹, Giulia Regiroli ², Bruno Ranchin ⁵, Julie Bernardor ^{10 11}

2023

Emodialisi ed ECMO nel neonato

[Review](#) > [Pediatr Crit Care Med](#). 2023 Apr 1;24(4):e196–e201.

doi: 10.1097/PCC.0000000000003177. Epub 2023 Jan 13.

Continuous Venovenous Hemofiltration Performed by Neonatologists With Cardio-Renal Pediatric Dialysis Emergency Machine to Treat Fluid Overload During Multiple Organ Dysfunction Syndrome: A Case Series

Giulia Regiroli ¹, Barbara Loi ¹, Lucilla Pezza ¹, Victor Sartorius ¹, Anna Foti ¹,
Pasquale Fabio Barra ¹, Roberta Centorrino ¹, Matteo Di Nardo ², Daniele De Luca ^{1 3}

2023, submitted to JVA

Original research articles

Vascular accesses for short term haemodialysis in new-born and infant: trimming of double lumen power injectable polyurethane small catheters as a novel methodology to preserve vascular asset

Ugo Graziano¹, Vittorio Serio¹, Giovanni Severino², Pasquale Esposito¹, Lucia Calise¹, De Angelis Sabrina¹, Carmine Pecoraro¹.

¹ Santobono-Pausilipon – Naples Children's Hospital – Italy

² Federico II - Naples University – Italy

Emodialisi nel bambino



British Journal of Anaesthesia 110 (6): 888–91 (2013)
doi:10.1093/bja/aet078

2013

EDITORIAL II

Difficult peripheral veins: turn on the lights

M. Lamperti^{1*} and M. Pittiruti²

¹ Department of Neuroanaesthesia, National Neurological Institute Besta, Via Celoria, 11, 20136 Milan, Italy

² Department of Surgery, Catholic University, Rome, Italy

* Corresponding author. E-mail: doclampmd@gmail.com

Il bambino DIVA: NIR vs. Eco

Downloaded from <http://bmjpaedsopen.bmj.com/> on March 29, 2018 - Published by group.bmj.com

Open Access

Original article

BMJ
Paediatrics
Open

Ultrasound-guided placement of long peripheral cannulas in children over the age of 10 years admitted to the emergency department: a pilot study

2018

Angela Paladini,¹ Antonio Chiaretti,¹ Kidane Wolde Sellasie,² Mauro Pittiruti,³
Giovanni Vento¹

TECNICA DI IMPIANTO

V Convegno Nazionale **GAVePed**



- Sedazione e anestesia nel neonato (15') - **Gina Ancora**
- Sedazione e anestesia nel bambino (15') - **Aldo Mancino**
- Nuove metodiche di sedazione digitale (15') - **Clelia Zanaboni**

Original research article

JVA | The Journal of
Vascular Access

Comparison between sedation room and operating room in central venous catheter positioning in children

**Antonio Chiaretti¹, Mauro Pittiruti² , Giovanni Sassudelli¹,
Giorgio Conti³, Marco Rossi⁴, Silvia Maria Pulitanò³,
Aldo Mancino³, Angela Pusateri⁴, Antonio Gatto¹ ,
and Federica Tosi⁴**

The Journal of Vascular Access
2021, Vol. 22(2) 184–188
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DOI: 10.1177/1129729820932415
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2020

COnsensus on Pediatric Pain in the Emergency Room: the COPPER project, issued by 17 Italian scientific societies **2020**



Franca Benini^{1*}, Ilaria Corsini², Emanuele Castagno³, Davide Silvagni⁴, Annunziata Lucarelli⁵, Luca Giacomelli⁶, Angela Amigoni⁷, Gina Ancora⁸, Marinella Astuto⁹, Fabio Borrometi¹⁰, Rosa Maria Casilli⁷, Elena Chiappini¹¹, Renato Cutrera¹², Arianna De Matteis¹³, Giuseppe di Mauro¹¹, Anna Musolino¹⁴, Andrea Fabbri¹⁵, Federica Ferrero¹¹, Martina Fornaro¹⁶, Michele Gangemi¹⁶, Paola Lago⁸, Francesco Macrì¹⁷, Luca Manfredini¹⁸, Luigi Memo¹⁹, Annamaria Minicucci²⁰, Paolo Petralia²⁰, Nicola Pinelli²¹, Roberto Antonucci²², Silvia Tajè²³, Emiliano Tizi⁹, Leo Venturelli¹¹, Stefania Zampogna¹⁴ and Antonio F. Urbino³

2023



OPEN ACCESS

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Netherlands
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Cliniques Universitaires Saint-Luc, Belgium

Combination of ketamine and fentanyl (KetaFent) for safe insertion of ultrasound-guided central venous catheters in infants

Vito D'Andrea^{1*} , Giorgia Prontera¹, Giovanni Barone²
and Giovanni Vento¹

¹Department of Woman and Child Health and Public Health, Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Rome, Italy, ²Neonatal Intensive Care Unit, Infermi Hospital, Rimini, Italy

BMJ Open Virtual reality-based distraction for intravenous insertion-related distress in children: a study protocol for a randomised controlled trial

Samina Ali ¹, Manasi Rajagopal,¹ Jennifer Stinson,² Keon Ma,³ Ben Vandermeer,⁴ Bailey Felkar,⁵ Kurt Schreiner,⁶ Amanda Proctor,⁷ Jennifer Plume,⁸ Lisa Hartling ^{1,4}

Nuove forme di sedazione

JVA
ISSN 1129-7298

J Vasc Access 2017; 18 (4): e50-e51
DOI: 10.5301/jva.5000712

CORRESPONDENCE

Auto-hypnosis before and during vascular access placement for better patient comfort

Réalité virtuelle et soins palliatifs, un complément dans la prise en charge

Alexandra Lafay^a
Aide-soignante

Sullivan Gérard^a
Infirmier

Géraldine
Thevenet-Geay^a
Cadre de santé

Pascale Sontag^{b,*}
Cadre de santé,
DSI secteur médecine

^a Unité Soins de support CCC,
Centre Léon-Bérard,
28, rue Laennec,
69373 Lyon cedex 08, France

Incontournables dans l'univers du jeu vidéo ou du cinéma, les masques de réalité virtuelle ont fait leur entrée à l'hôpital ces dernières années. Une équipe de soins lyonnaise propose un retour d'expérience sur l'intérêt de ces dispositifs en complément de la prise en soins des patients dans un service de soins à orientation palliative.

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Mots clés - angoisse; fin de vie; hypnose; réalité virtuelle; sophrologie

Virtual reality and palliative care, a complement in the care provision. Commonplace in the world of gaming or the cinema, virtual reality headsets have made their appearance in the hospital over recent years. A nursing team in Lyon shares its feedback regarding the benefit of these tools as a complement to the care provided to patients in a palliative care unit.

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Keywords - anxiety; end of life; hypnosis; sophrology; virtual reality

SCELTA DELLA VENA PRIMA DELLA VENIPUNTURA



Vene superficiali

Techniques in vascular access

JVA | The Journal of
Vascular Access

Rapid Superficial Vein Assessment (RaSuVA): A pre-procedural systematic evaluation of superficial veins to optimize venous catheterization in neonates

The Journal of Vascular Access

1-5

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DOI: 10.1177/11297298221098481

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2022

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

Vene profonde: usare l'ecografo per la valutazione preprocedurale!

2020

Ultrasound-guided cannulation in children

- (1) For vascular access device placement in paediatric patients, we suggest the global use of ultrasound to assist all steps of the procedure that include preprocedural ultrasound evaluation of all possible options; recognition of possible local disease; ultrasound-guided real-time puncture; verification of the direction of guidewires and catheters in the vessel, and onwards towards the superior vena cava for centrally inserted central catheters, or onwards towards the inferior vena cava for femoral or groin catheters; verification of the correct position of the catheter tip; detection of possible postprocedural early and late complications (2B).

EJA

Eur J Anaesthesiol 2020; **37**:344–376

GUIDELINES

European Society of Anaesthesiology guidelines on peri-operative use of ultrasound-guided for vascular access (PERSEUS vascular access)

Massimo Lamperti, Daniele Guerino Biasucci, Nicola Disma, Mauro Pittiruti, Christian Breschan, Davide Vailati, Matteo Subert, Vilma Traškaitė, Andrius Macas, Jean-Pierre Estebe, Regis Fuzier, Emmanuel Boselli and Philip Hopkins

Vene profonde: usare l'ecografo per la valutazione preprocedurale!

2020

Editorial

JVA | The Journal of
Vascular Access

Guidelines of the Italian Association of Pediatric Hematology and Oncology for the management of the central venous access devices in pediatric patients with onco-hematological disease

The Journal of Vascular Access

1–15

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**Monica Cellini¹, Anna Bergadano²,  Alessandro Crocoli³, 
Clara Badino⁴, Francesca Carraro², Luca Sidro⁵, Debora Botta⁶,
Alessia Pancaldi⁷, Francesca Rossetti⁸, Federica Pitta⁹ and
Simone Cesaro¹⁰ **

Vene profonde: usare l'ecografo per la valutazione preprocedurale!

Singh et al. *Critical Care* (2020) 24:65
<https://doi.org/10.1186/s13054-020-2787-9>

Critical Care

2020

RESEARCH

Open Access

International evidence-based guidelines on Point of Care Ultrasound (POCUS) for critically ill neonates and children issued by the POCUS Working Group of the European Society of Paediatric and Neonatal Intensive Care (ESPNIC)



Yogen Singh^{1,2*}, Cecile Tissot^{3†}, María V. Fraga⁴, Nadya Yousef⁵, Rafael Gonzalez Cortes⁶, Jorge Lopez⁶, Joan Sanchez-de-Toledo⁷, Joe Brierley⁸, Juan Mayordomo Colunga⁹, Dusan Raffaj¹⁰, Eduardo Da Cruz¹¹, Philippe Durand¹², Peter Kenderessy¹³, Hans-Joerg Lang¹⁴, Akira Nishisaki¹⁵, Martin C. Kneyber¹⁶, Pierre Tissieres¹², Thomas W. Conlon¹⁵ and Daniele De Luca^{5,17}

A Systematic Ultrasound Evaluation of the Diameter of Deep Veins in the Newborn: Results and Implications for Clinical Practice

2018

Giovanni Barone^a Vito D'Andrea^a Giovanni Vento^a Mauro Pittiruti^b

^aNeonatal Intensive Care Unit, Fondazione Policlinico A. Gemelli IRCSS, Rome, Italy; ^bDepartment of Surgery, Fondazione Policlinico A. Gemelli IRCSS, Rome, Italy

Misurare le vene....

Original research article

JVA | The Journal of
Vascular Access

Caliber of the deep veins of the arm in infants and neonates: The VEEIN study (Vascular Echography Evaluation in Infants and Neonates)

Clelia Zanaboni¹, Michela Bevilacqua², Filippo Bernasconi³,
Linda Appierto⁴, Maria Giuseppina Annetta⁵  and
Mauro Pittiruti⁶ 

The Journal of Vascular Access
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2023

Review

JVA | The Journal of
Vascular Access

Rapid Central Vein Assessment (RaCeVA): A systematic, standardized approach for ultrasound assessment before central venous catheterization

Timothy R Spencer¹ and Mauro Pittiruti²

The Journal of Vascular Access
2019, Vol. 20(3) 239–249
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2018

Studiare sistematicamente le vene....

Editorial

JVA | The Journal of
Vascular Access

Rapid Femoral Vein Assessment (RaFeVA): A systematic protocol for ultrasound evaluation of the veins of the lower limb, so to optimize the insertion of femorally inserted central catheters

Fabrizio Brescia¹ , Mauro Pittiruti² , Matthew Ostroff³ 
and Daniele G Biasucci⁴

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2020

Editorial

JVA | The Journal of
Vascular Access

The SIP protocol update: Eight strategies, incorporating Rapid Peripheral Vein Assessment (RaPeVA), to minimize complications associated with peripherally inserted central catheter insertion

Fabrizio Brescia¹ , Mauro Pittiruti² ,
Timothy R Spencer³  and Robert B Dawson⁴

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2022

UN PUNTO MOLTO CHIARO

- Oggi occorre studiare sistematicamente le vene del neonato e del bambino prima della inserzione dell'accesso venoso
 - **Vene superficiali:**
 - Protocollo RaSuVA
 - **Vene profonde:**
 - Protocollo RaCeVA
 - Protocollo RaPeVA
 - Protocollo RaFeVA

ACCESSI VENOSI ECOGUIDATI NEL NEONATO



V Convegno Nazionale **GAVePed**



- La venipuntura centrale ecoguidata nel neonato (15')
– **Christian Breschan**

Ultrasound Guided Central Vascular Access in Neonates, Infants and Children

Mauro Pittiruti*

Department of Surgery, Catholic University, Largo Francesco Vito 1, 00168 Roma, Italy

2012

**Una 'novità' che
risale a più di 10
anni fa...!**

JVasc Access 2013;14 (4): 318-319

DOI: 10.5301/jva.5000158

EDITORIAL

Central venous catheters in neonates: old territory, new frontiers

Invited commentary to *Peripherally inserted central venous catheters in critically ill premature neonates*, by Ozkiraz et al, J Vasc Access 2013;14(4):320-324

Mauro Pittiruti

Department of Surgery, Catholic University Hospital, Rome - Italy

2013

Original research article

JVA | The Journal of
Vascular Access

Centrally inserted central catheters in preterm neonates with weight below 1500 g by ultrasound-guided access to the brachio-cephalic vein

The Journal of Vascular Access
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Giovanni Barone¹ , Mauro Pittiruti² , Gina Ancora¹,
Giovanni Vento³, Francesca Tota⁴ and Vito D'Andrea³ 

2020

Original research article

JVA | The Journal of
Vascular Access

Ultrasound-guided cannulation of the brachiocephalic vein in newborns: A novel approach with a supraclavicular view for tip navigation and tip location

The Journal of Vascular Access
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Ferdinando Spagnuolo  and Teresa Vacchiano

2021

CORRESPONDENCE

Retrospective evaluation of 599 brachiocephalic vein cannulations in neonates and preterm infants

2022

Christian Breschan^{1,*}, Gudrun Graf¹, Christoph Arneitz², Haro Stettner³,
Stefan Neuwersch¹, Christian Stadik⁴, Markus Koestenberger¹, Sandra Holasek⁵ and
Rudolf Likar¹

¹Department of Anaesthesia, Klinikum Klagenfurt, Klagenfurt, Austria, ²Department of Pediatric Surgery, Klinikum Klagenfurt, Klagenfurt, Austria, ³Department of Statistics, University of Klagenfurt, Klagenfurt, Austria, ⁴Department of Neurorehabilitation, Krankenhaus Hermagor, Klagenfurt, Austria and ⁵Institute of Pathophysiology, Medical University of Graz, Graz, Austria

VENIPUNTURA ECOGUIDATA PER TUTTI GLI ACCESSI VENOSI CENTRALI NEL BAMBINO



Venipuntura ecoguidata per tutti gli accessi venosi centrali nel bambino!

Intensive Care Med
DOI 10.1007/s00134-012-2597-x

CONFERENCE REPORTS AND EXPERT PANEL

2012

Massimo Lamperti
Andrew R. Bodenham
Mauro Pittiruti
Michael Blaivas
John G. Augoustides
Mahmoud Elbarbary
Thierry Pirotte
Dimitrios Karakitsos
Jack LeDonne
Stephanie Doniger
Giancarlo Scoppettuolo
David Feller-Kopman
Wolfram Schummer
Roberto Biffi
Eric Desruennes
Lawrence A. Melniker
Susan T. Verghese

International evidence-based recommendations on ultrasound-guided vascular access



Venipuntura ecoguidata per tutti gli accessi venosi centrali nel bambino!

2012

Current Drug Targets, 2012, 13, 961-969

961

Ultrasound Guided Central Vascular Access in Neonates, Infants and Children

Mauro Pittiruti*

Department of Surgery, Catholic University, Largo Francesco Vito 1, 00168 Roma, Italy

Venipuntura ecoguidata per tutti gli accessi venosi centrali nel bambino!

JVA

ISSN 1129-7298

J Vasc Access 2014; 00 (00): 000-000

DOI: 10.5301/jva.5000314

ORIGINAL ARTICLE

2014

Central venous access devices in pediatric malignancies: a position paper of Italian Association of Pediatric Hematology and Oncology

Alessandro Crocoli¹, Assunta Tornesello², Mauro Pittiruti³, Angelica Barone⁴, Paola Muggeo⁵, Alessandro Inserra¹,
Angelo Claudio Molinari⁶, Valeria Grillenzoni⁷, Viviana Durante⁸, Maria Pia Cicalese⁹, Giulio Andrea Zanazzo¹⁰, Simone Cesaro⁷

Venipuntura ecoguidata per tutti gli accessi venosi centrali nel bambino!

Infusion Therapy Standards of Practice

Lisa A. Gorski, MS, RN, HHCNS-BC, CRNI®, FAAN

Lynn Hadaway, MEd, RN, NPD-BC, CRNI®

Mary E. Hagle, PhD, RN-BC, FAAN

Daphne Broadhurst, MN, RN, CVAA(C)

Simon Clare, MRes, BA, RGN

Tricia Kleidon, MNsc (Nurs. Prac), BNsc, RN

Britt M. Meyer, PhD, RN, CRNI®, VA-BC, NE-BC

Barb Nickel, APRN-CNS, CCRN, CRNI®

Stephen Rowley, MSc, BSc (Hons), RGN, RSCN

Elizabeth Sharpe, DNP, APRN-CNP, NNP-BC, VA-BC, FNAP, FAANP, FAAN

Mary Alexander, MA, RN, CRNI®, CAE, FAAN

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G. Use real-time ultrasound guidance and a systematic approach to insertion of CVADs in adults and children to improve insertion success rates, reduce number of needle punctures, and decrease insertion complication rates.^{9,10,37-39} (I)

2021

Review

Vascular Access in Pediatric Oncology and Hematology: State of the Art

Alessandro Crocoli ¹, Cristina Martucci ^{1,*}, Giorgio Persano ¹, Maria Debora De Pasquale ², Annalisa Serra ², Antonella Accinni ¹, Ivan Pietro Aloï ¹, Arianna Bertocchini ¹, Simone Frediani ¹, Silvia Madafferì ¹, Valerio Pardi ¹ and Alessandro Inserra ¹

¹ General Surgery Department, Bambino Gesù Children's Hospital, IRCCS, 00165 Rome, Italy; alessandro.crocoli@opbg.net (A.C.); giorgio.persano@opbg.net (G.P.); antonella.accinni@opbg.net (A.A.); ivanpietro.aloi@opbg.net (I.P.A.); arianna.bertocchini@opbg.net (A.B.); simone.frediani@opbg.net (S.F.); silvia.madafferì@opbg.net (S.M.); valerio.pardi@opbg.net (V.P.); alessandro.inserra@opbg.net (A.I.)

² Paediatric Haematology/Oncology Cell and Gene Therapy Department, Bambino Gesù Children's Hospital, IRCCS, 00165 Rome, Italy; mdebora.depasquale@opbg.net (M.D.D.P.); annalisa.serra@opbg.net (A.S.)

* Correspondence: cristina.martucci@opbg.net; Tel.: +39-0668592155

Venipuntura ecoguidata per tutti gli accessi venosi centrali nel bambino!

Table 1. AIEOP Recommendations for VADs Positioning *.

-
- (1) A tunneled catheter is recommended for continuous use (A I)
 - (2) For discontinuous use, a totally implanted VAD is recommended (A II)
 - (3) It is recommended that the ratio of the catheter caliber to vein diameter should not exceed 1/3 (A II)
 - (4) Multiple lumen VADs should be inserted only in few selected patients, based on the intensity of care and on the therapeutic program (A)
 - (5) The choice of material must be based on high performance in terms of guaranteed flows and pressure resistance as well as device endurance (A II)
 - (6) Insertion by surgical venous cutdown is not recommended (A I)
 - (7) The ultrasound-guided technique represents the current standard for venipuncture and venous cannulation for insertion of VAD (A It)
 - (8) The use of cyanoacrylate tissue glue is recommended (A II)

UN PUNTO MOLTO CHIARO:

- L'accesso venoso mediante venolisi non ha più senso
- L'accesso venoso centrale alla cieca (mediante 'reperi cutanei') non ha più senso

TIP LOCATION INTRAPROCEDURALE

Infusion Therapy Standards of Practice

Lisa A. Gorski, MS, RN, HHCNS-BC, CRNI®, FAAN

Lynn Hadaway, MEd, RN, NPD-BC, CRNI®

Mary E. Hagle, PhD, RN-BC, FAAN

Daphne Broadhurst, MN, RN, CVAA(C)

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2021

Use methods for identifying CVAD tip location during the insertion procedure (ie, “real-time”) due to greater accuracy, more rapid initiation of infusion therapy, and reduced costs.³⁸⁻⁴⁷ (III)

UN PUNTO MOLTO CHIARO:

- La verifica post-procedurale della posizione della punta (es. mediante Rx o eco o altro) va riservata a casi eccezionali.
- Occorre fare tutto il possibile perché la verifica sia intraprocedurale (quindi: usare ECG intracavitario e/o ecocardioscopia).

V Convegno Nazionale **GAVePed**



- Tip location dei cateteri epicutaneo cavali e dei cateteri venosi ombelicali (15') - **Antonella Capasso**
- Tip location dei PICC e dei CICC (15') - **Daniele G.Biasucci**
- Tip location dei FICC (15') - **Maria Giuseppina Annetta**
- Integrazione tra metodo ECHOTIP e metodo dell'ECG intracavitario (15') - **Geremia Zito Marinosci**

TIP LOCATION MEDIANTE ECOCARDIOSCOPIA



RESEARCH

Open Access

International evidence-based guidelines on Point of Care Ultrasound (POCUS) for critically ill neonates and children issued by the POCUS Working Group of the European Society of Paediatric and Neonatal Intensive Care (ESPNIC)



Yogen Singh^{1,2*}, Cecile Tissot^{3†}, María V. Fraga⁴, Nadya Yousef⁵, Rafael Gonzalez Cortes⁶, Jorge Lopez⁶, Joan Sanchez-de-Toledo⁷, Joe Brierley⁸, Juan Mayordomo Colunga⁹, Dusan Raffaj¹⁰, Eduardo Da Cruz¹¹, Philippe Durand¹², Peter Kenderessy¹³, Hans-Joerg Lang¹⁴, Akira Nishisaki¹⁵, Martin C. Kneyber¹⁶, Pierre Tissieres¹², Thomas W. Conlon¹⁵ and Daniele De Luca^{5,17}

2020

EJA

Eur J Anaesthesiol 2020; **37**:344–376

GUIDELINES

European Society of Anaesthesiology guidelines on peri-operative use of ultrasound-guided for vascular access (PERSEUS vascular access)

Massimo Lamperti, Daniele Guerino Biasucci, Nicola Disma, Mauro Pittiruti, Christian Breschan, Davide Vailati, Matteo Subert, Vilma Traškaitė, Andrius Macas, Jean-Pierre Estebe, Regis Fuzier, Emmanuel Boselli and Philip Hopkins

Recommendations

- (1) The quality of evidence on which to base recommendations is generally weak, with relatively small RCTs and prospective cohort studies that have a high degree of heterogeneity
- (2) When an intracardiac electrocardiogram is not applicable, we recommend using real-time ultrasound to detect and prevent central venous catheter malposition, as it has been shown to be well tolerated, feasible, quickly performed and interpreted at bedside, and more accurate and faster than a chest radiograph **(1C)**.
- (3) We recommend combining vascular ultrasound for guidewire and central venous line tip navigation with transthoracic echocardiography for tip location **(1C)**.

Neo-ECHOTIP: A structured protocol for ultrasound-based tip navigation and tip location during placement of central venous access devices in neonates

**Giovanni Barone¹ , Mauro Pittiruti² , Daniele G Biasucci³,
Daniele Elisei⁴, Emanuele Iacobone⁴ , Antonio La Greca²,
Geremia Zito Marinosci⁵ and Vito D'Andrea⁶ **

The Journal of Vascular Access
1–10

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2021

Editorial

JVA | The Journal of
Vascular Access

ECHOTIP-Ped: A structured protocol for ultrasound-based tip navigation and tip location during placement of central venous access devices in pediatric patients

The Journal of Vascular Access
1–9

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**Geremia Zito Marinosci^{1*}, Daniele Guerino Biasucci^{2*} ,
Giovanni Barone³, Vito D'Andrea⁴ , Daniele Elisei⁵,
Emanuele Iacobone⁵ , Antonio La Greca⁶ and Mauro Pittiruti⁶ **

2022

Ultrasound guided catheter tip location in neonates: a prospective cohort study

Fiorentino Grasso MD¹, Antonella Capasso MD¹, Daniela Pacella PhD², Francesco Borgia MD³,
Serena Salomè MD¹, Letizia Capasso MD PhD¹, Francesco Raimondi MD PhD¹

¹Section of Neonatology, Department of Translational Medical Sciences, Federico II University, Naples, Italy

²Department of Public Health, Federico II University, Naples, Italy

³Section of Cardiology, Department of Advanced Biomedical Sciences, Federico II University, Naples, Italy

METODO DELL'ECG INTRACAVITARIO



The intracavitary ECG method for positioning the tip of central venous access devices in pediatric patients: results of an Italian multicenter study

Francesca Rossetti¹, Mauro Pittiruti², Massimo Lamperti³, Ugo Graziano⁴, Davide Celentano⁵, Giuseppe Capozzoli⁶

¹Department of Anesthesia, Children's Hospital 'Meyer', Firenze - Italy

²Department of Surgery, Catholic University Hospital, Roma - Italy

³Department of Neuroanesthesia, Neurological Institute 'Besta', Milano - Italy

⁴Department of Surgery, Children's Hospital 'Santobono', Napoli - Italy

⁵Pediatric Intensive Care Unit, Catholic University Hospital, Roma - Italy

⁶Department of Anesthesia and Intensive Care, Ospedale Civile di Bolzano, Bolzano - Italy

Original research article

JVA | The Journal of
Vascular Access

The intracavitary electrocardiography method for positioning the tip of epicutaneous cava catheter in neonates: Pilot study

The Journal of Vascular Access
2018, Vol. 19(6) 542–547
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2018

Antonella Capasso¹, Rossella Mastroianni¹, Annalisa Passariello^{2,3},
Marta Palma², Francesco Messina⁴, Antonella Ansalone¹,
Italo Bernardo¹, Daniela Brescia¹, Francesco Crispino¹,
Carolina Grassia¹, Attilio Romano¹ and Gaetano Ausanio¹

Original research article

JVA | The Journal of
Vascular Access

The intracavitary ECG method for tip location of ultrasound-guided centrally inserted central catheter in neonates

The Journal of Vascular Access
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2022

Vito D'Andrea¹ , Lucilla Pezza¹, Giorgia Prontera¹,
Gina Ancora², Mauro Pittiruti³ , Giovanni Vento¹
and Giovanni Barone² 

Original research article

JVA | The Journal of
Vascular Access

The intracavitary electrocardiography method for tip location of jugular internal vein access device in infants of less than 5 kg: A pilot study

The Journal of Vascular Access
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2018

Rossella Mastroianni, Antonella Capasso and Gaetano Ausanio

Original research article

JVA | The Journal of
Vascular Access

Ultrasound versus intracavitary electrocardiography for intraprocedural tip location during central venous catheterization in infants and children: A prospective clinical study

The Journal of Vascular Access
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**Mauro Pittiruti¹ , Gilda Salerno², Aldo Mancino²,
Debora Carlini², Davide Celentano³, Maria Giuseppina Annetta⁴ 
and Giorgio Conti⁴**

UN PUNTO MOLTO CHIARO

Abbandonare la fluoroscopia !

- Più costosa
- Più scomoda
- Meno costo-efficace
- Più pericolosa
- Meno accurata della tecnica ECG e dell'ecocardio

AHRQ recommendations



2013



Annals of Internal Medicine

SUPPLEMENT

The Top Patient Safety Strategies That Can Be Encouraged for Adoption Now

Paul G. Shekelle, MD, PhD; Peter J. Pronovost, MD, PhD; Robert M. Wachter, MD; Kathryn M. McDonald, MM; Karen Schoelles, MD, SM; Sydney M. Dy, MD, MSc; Kaveh Shojania, MD; James T. Reston, PhD, MPH; Alyce S. Adams, PhD; Peter B. Angood, MD; David W. Bates, MD, MSc; Leonard Bickman, PhD; Pascale Carayon, PhD; Sir Liam Donaldson, MBChB, MSc, MD; Naihua Duan, PhD; Donna O. Farley, PhD, MPH; Trisha Greenhalgh, BM BCH; John L. Haughom, MD; Eileen Lake, PhD, RN; Richard Lilford, PhD; Kathleen N. Lohr, PhD, MA, MPhil; Gregg S. Meyer, MD, MSc; Marlene R. Miller, MD, MSc; Duncan V. Neuhouser, PhD, MBA, MHA; Gery Ryan, PhD; Sanjay Saint, MD, MPH; Stephen M. Shortell, PhD, MPH, MBA; David P. Stevens, MD; and Kieran Walshe, PhD

INS 2021

Avoid fluoroscopy except in the case of difficult CVAD insertions, as it requires exposure to ionizing radiation.

Postprocedure radiograph imaging is not necessary if alternative tip location technology confirms proper tip placement.^{3,12-18} (II)

GESTIONE DEL DISPOSITIVO

SECURE & PROTECT

STABILIZZARE IL CATETERE E PROTEGGERE IL SITO DI EMERGENZA

- 1) Colla in cianoacrilato
- 2) Ancoraggio sottocutaneo
- 3) Membrane semipermeabili ad alto MVTR

V Convegno Nazionale GAVePed



- La colla in cianoacrilato negli accessi venosi periferici (15')
- **Roland Van Rens**
- La colla in cianoacrilato per cateteri ombelicali e epicutaneo cavali (15') - **Vito D'Andrea**
- La colla in cianoacrilato per PICC/CICC/FICC (15')
- **Alessandro Crocoli**
- L'ancoraggio sottocutaneo nel neonato (15') - **Francesca Tota**
- L'ancoraggio sottocutaneo nel bambino: cuffia o ancora? (15') - **Cristina Martucci**
- La scelta della membrana trasparente semipermeabile (15') - **Francesca Rossetti**

LA COLLA IN CIANOACRILATO



JVA

ISSN 1129-7298

ORIGINAL RESEARCH ARTICLE

Experimental study on the chemico-physical interaction between a two-component cyanoacrylate glue and the material of PICCs

Francesca Di Puccio¹, Daniela Giacomarro¹, Lorenza Mattei¹, Mauro Pittiruti², Giancarlo Scoppettuolo²

¹ Dipartimento di Ingegneria Civile e Industriale, Università di Pisa, Pisa - Italy

² Fondazione Policlinico Universitario "A. Gemelli", Roma - Italy

JVA | The Journal of Vascular Access

The Journal of Vascular Access
2018, Vol. 19(1) 58–62
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2018

Techniques in vascular access

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

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2021

Ten years of clinical experience with cyanoacrylate glue for venous access in a 1300-bed university hospital

Mauro Pittiruti, Maria Giuseppina Annetta, Bruno Marche, Vito D'Andrea and Giancarlo Scoppettuolo

2022

Original research article

Short peripheral intravenous catheter securement with cyanoacrylate glue compared to conventional dressing: A randomized controlled trial

Amit Bahl¹ , S. Matthew Gibson, David Jankowski
and Nai-Wei Chen

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2022

Original research article

JVA | The Journal of
Vascular Access

Octyl-butyl-cyanoacrylate glue for securement of peripheral intravenous catheters: A retrospective, observational study in the neonatal population

Matheus FPT van Rens¹ , Timothy R Spencer² , Kevin Hugill³,
Airene LV Francia¹, Fredericus HJ van Loon^{4,5}  and
Mohammad AA Bayoumi¹ 

The Journal of Vascular Access
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2023

The Journal of Pediatrics

Securement of umbilical venous catheter using cyanoacrylate glue: a randomized controlled trial.

--Manuscript Draft--

2023, submitted

Manuscript Number:	2023204R2
Article Type:	Original Article
Keywords:	Umbilical venous catheter; cyanoacrylate glue; securement; dislodgement; tip migration
Corresponding Author:	Vito D'Andrea University Hospital Agostino Gemelli Department of Woman and Child Health Sciences Roma, Lazio ITALY
First Author:	Vito D'Andrea

Review

Vascular Access in Pediatric Oncology and Hematology: State of the Art

Alessandro Crocoli ¹, Cristina Martucci ^{1,*}, Giorgio Persano ¹, Maria Debora De Pasquale ², Annalisa Serra ², Antonella Accinni ¹, Ivan Pietro Aloï ¹, Arianna Bertocchini ¹, Simone Frediani ¹, Silvia Madafferì ¹, Valerio Pardi ¹ and Alessandro Inserra ¹

¹ General Surgery Department, Bambino Gesù Children's Hospital, IRCCS, 00165 Rome, Italy; alessandro.crocoli@opbg.net (A.C.); giorgio.persano@opbg.net (G.P.); antonella.accinni@opbg.net (A.A.); ivanpietro.aloi@opbg.net (I.P.A.); arianna.bertocchini@opbg.net (A.B.); simone.frediani@opbg.net (S.F.); silvia.madafferì@opbg.net (S.M.); valerio.pardi@opbg.net (V.P.); alessandro.inserra@opbg.net (A.I.)

² Paediatric Haematology/Oncology Cell and Gene Therapy Department, Bambino Gesù Children's Hospital, IRCCS, 00165 Rome, Italy; mdebora.depasquale@opbg.net (M.D.D.P.); annalisa.serra@opbg.net (A.S.)

* Correspondence: cristina.martucci@opbg.net; Tel.: +39-0668592155

Table 1. AIEOP Recommendations for VADs Positioning *.

- (1) A tunneled catheter is recommended for continuous use (A I)
- (2) For discontinuous use, a totally implanted VAD is recommended (A II)
- (3) It is recommended that the ratio of the catheter caliber to vein diameter should not exceed 1/3 (A II)
- (4) Multiple lumen VADs should be inserted only in few selected patients, based on the intensity of care and on the therapeutic program (A)
- (5) The choice of material must be based on high performance in terms of guaranteed flows and pressure resistance as well as device endurance (A II)
- (6) Insertion by surgical venous cutdown is not recommended (A I)
- (7) The ultrasound-guided technique represents the current standard for venipuncture and venous cannulation for insertion of VAD (A II)
- (8) The use of cyanoacrylate tissue glue is recommended (A II)

ANCORAGGIO SOTTOCUTANEO



Potential role of a subcutaneously anchored securement device in preventing dislodgment of tunneled-cuffed central venous devices in pediatric patients

Andrea Dolcino^{1,2}, Antonio Salsano¹, Andrea Dato², Nicola Disma³, Alessio Pini Prato⁴, Filippo Bernasconi⁵, Luigi Montagnini², Stefano Avanzini², Michela Bevilacqua², Giovanni Montobbio², Girolamo Mattioli², Clelia Zanaboni²

¹ University of Genoa, Genoa - Italy

² Giannina Gaslini Institute, Genoa - Italy

³ Department of Anaesthesia, Great Ormond Street Hospital, London - UK

⁴ Antonio e Biagio e Cesare Arrigo Hospital, Alessandria - Italy

⁵ University of Milan, Milan - Italy

2017

Clinical experience of a subcutaneously anchored sutureless system for securing central venous catheters

2019

Mauro Pittiruti, Giancarlo Scoppettuolo, Laura Dolcetti, Davide Celentano, Alessandro Emoli, Bruno Marche and Andrea Musarò

Securement of central venous catheters by subcutaneously anchored sutureless devices in neonates

Vito D'Andrea^a , Giovanni Barone^b, Lucilla Pezza^a, Giorgia Prontera^a, Giovanni Vento^a and Mauro Pittiruti^c

2021

^aDepartment of Woman and Child Health and Public Health, Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Roma, Italy;

^bNeonatal Intensive Care Unit, Azienda Sanitaria Romagna, Infermi Hospital Rimini, Rimini, Italy; ^cDepartment of Surgery, Fondazione Policlinico Universitario "Agostino Gemelli" IRCCS - Università Cattolica del Sacro Cuore, Rome, Italy

Safety and effectiveness of subcutaneously anchored securement for tunneled central catheters in oncological pediatric patients: A retrospective study

Alessandro Crocoli¹ , Cristina Martucci¹ , Luca Sidro², Daniela Delle Donne², Giuseppe Menna³, Mauro Pittiruti⁴ , Maria Debora De Pasquale⁵, Luisa Strocchio⁵, Gian Luigi Natali⁶ and Alessandro Inserra¹

2021

The Journal of Vascular Access
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GAVeCeLT-WoCoVA Consensus on subcutaneously anchored securement devices for the securement of venous catheters: Current evidence and recommendations for future research

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**Fulvio Pinelli¹ , Mauro Pittiruti² , Ton Van Boxtel³, Giovanni Barone⁴ ,
Roberto Biffi⁵ , Giuseppe Capozzoli⁶, Alessandro Crocoli⁷ , Stefano Elli⁸,
Daniele Elisei⁹, Adam Fabiani¹⁰, Cristina Garrino¹¹, Ugo Graziano¹²,
Luca Montagnani¹³, Alessio Pini Prato¹⁴, Giancarlo Scoppettuolo¹⁵, Nicola Zadra¹⁶,
Clelia Zanaboni¹⁷, Pietro Zerla¹⁸ , Evangelos Konstatinou¹⁹, Matt Jones²⁰,
Hervé Rosay²¹, Liz Simcock²², Marguerite Stas²³ and Gilda Pepe¹⁵**

MEMBRANE TRASPARENTI AD ALTA TRASPIRABILITÀ (ALTO MVTR)



Original research article

2021

JVA | The Journal of
Vascular Access

Comparing test methods for moisture-vapor transmission rate (MVTR) for vascular access transparent semipermeable dressings

Paul Bainbridge¹, Paul Browning², Stéphanie F Bernatchez³ , Casey Blaser³ and Guido Hitschmann¹

The Journal of Vascular Access
1–8

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Dressing	MVTR liquid (inverted method)	MVTR vapor (upright method)
A Tegaderm Advanced	4089	1682
B	845	773
C	1225	1079
D	1047	976
E	1031	936
F ^b IV 3000	30,530	2838
G SorbaView	5164	1644

Article

Use of the Dialkylcarbamoylchloride Dressing in the Care of Central Venous Access Exit Site in a Pediatric and Neonatal Population

Giorgio Lamberti ¹, Vincenzo Domenichelli ^{1,*}, Simona Straziuso ¹, Gabriella Pelusi ¹, Miria Natile ², Gina Ancora ² and Giovanni Barone ²

¹ Pediatric Surgery, Infermi Hospital, AUSL della Romagna, 47923 Rimini, Italy; giorgio.lamberti@auslromagna.it (G.L.)

² Neonatal Intensive Care Unit, Infermi Hospital, AUSL della Romagna, 47923 Rimini, Italy; gbarone85@yahoo.it (G.B.)

* Correspondence: vincenzo.domenichelli@auslromagna.it; Tel.: +39-0541-705-477

UN PUNTO MOLTO CHIARO:

- Abbandonare i punti di sutura
- Abbandonare le medicazioni con garza e cerotto

PREVENZIONE E TRATTAMENTO DELLE COMPLICANZE



V Convegno Nazionale GAVePed



- Antisepsi cutanea nel neonato e nel bambino (15')
- **Giancarlo Scoppettuolo**
- Potenzialità dell'utilizzo di taurolidina nel neonato (15')
- **Fiammetta Piersigilli**
- Una nuova strategia per prevenire le complicanze da catetere nei bambini in nutrizione parenterale domiciliare (15') - **Christina Belza**
- Filtri in linea in terapia intensiva neonatale (15')
- **Francesco Cresi** (videoregistrazione)
- Trombosi vs. guaina fibroblastica (15') - **Mauro Pittiruti**
- Diagnosi di infezione mediante DTP e indicazioni alla rimozione del dispositivo (15') - **Giancarlo Scoppettuolo**
- Rischio di occlusione del lume e gestione delle linee infusionali (15') - **Carmen Rodriguez**

INFEZIONI



JVA

ISSN 1129-7298

ORIGINAL RESEARCH ARTICLE

2018

The Journal of Vascular Access
2018, Vol. 19(2) 119–124
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DOI: 10.5301/jva.5000797
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Targeting zero catheter-related bloodstream infections in pediatric intensive care unit: a retrospective matched case-control study

Daniele G. Biasucci¹, Mauro Pittiruti², Alessandra Taddei³, Enzo Picconi¹, Alessandro Pizzi¹, Davide Celentano¹, Marco Piastra¹, Giancarlo Scoppettuolo⁴, Giorgio Conti¹

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Journal of Hospital Infection 125 (2022) 1–20



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Journal of Hospital Infection

2022



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

Catheter salvage strategies in children with central venous catheter-related or -associated bloodstream infections: a systematic review and meta-analysis

D. Buonsenso^{a,b,c,*}, G. Salerno^d, G. Sodero^d, F. Mariani^d, L. Pisapia^e, C. Gelormini^e, M. Di Nardo^f, P. Valentini^a, G. Scoppettuolo^g, D.G. Biasucci^{e,**}

Original research article

JVA | The Journal of Vascular Access

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1–7
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The burden of central line-associated bloodstream infections in children with medical complexity

Alessia Scarselli, Andrea Smarrazzo^{id}, Francesco De Sanctis, Lucilla Ravà, Michaela Carletti^{id}, Marta Ciofi Degli Atti, Marcella Aversa, Riccardo Drago, Alessandro Crocoli^{id}, Caterina Geremia, Andrea Guerricchio, Barbara Lucignano, Andrea Campana, Maria Antonietta De Ioris* and Daniela Perrotta*

2021

SHEA White Paper

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

Martha Muller MD^{1,2}, Kristina A. Bryant MD^{3,4}, Claudia Espinosa MD, MSC⁵, Jill A. Jones MS, APRN, NNP-BC⁶,
Caroline Quach MD, MSc, FRCPC^{7,8}, Jessica R. Rindels MBA, BSN, RN, CIC⁹, Dan L. Stewart MD^{10,11},
Kenneth M. Zangwill MD¹² and Pablo J. Sánchez MD^{13,14}

2023

**Antisepsi cutanea con clorexidina
Lock antimicrobici
Team accessi vascolari**

Observational Study > J Hosp Infect. 2019 Oct;103(2):223-226.

doi: 10.1016/j.jhin.2019.04.022. Epub 2019 May 2.

2019

Effects of prophylactic use of taurolidine-citrate lock on the number of catheter-related infections in children under 2 years of age undergoing surgery

M Łyszkowska¹, G Kowalewski², M Szymczak², D Polnik², A Mikołajczyk², P Kaliciński²

Original Communication

CE Reduction of Central Line–Associated Bloodstream Infections and Line Occlusions in Pediatric Intestinal Failure Patients Receiving Long-Term Parenteral Nutrition Using an Alternative Locking Solution, 4% Tetrasodium Ethylenediaminetetraacetic Acid

Jill Quirt, MD^{1,4}; Christina Belza, MN¹ ; Nikhil Pai, MD³ ; Rose-Frances Clause, MHSc³; Filip Markovic, BSc³; Sylvia Wong-Sterling, MN¹; Yaron Avitzur, MD^{1,2}; and Paul W. Wales, MD^{1,4}

 **aspen** | LEADING THE SCIENCE AND PRACTICE OF CLINICAL NUTRITION
American Society for Parenteral and Enteral Nutrition

Journal of Parenteral and Enteral Nutrition
Volume 45 Number 6
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DOI: 10.1002/jpen.1989
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2021

WoCoVA consensus on the clinical use of in-line filtration during intravenous infusions: Current evidence and recommendations for future research

The Journal of Vascular Access

1–13

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2021

Ton Van Boxtel¹ , Mauro Pittiruti² , Annemarie Arkema³,
Patrick Ball⁴ , Giovanni Barone⁵, Sergio Bertoglio⁶ ,
Roberto Biffi⁷ , Christian Dupont⁸, Caroline Fonzo-Christe⁹,
Jann Foster¹⁰, Matthew Jones¹¹, Cornelia Keck¹²,
Gillian Ray-Barruel¹³, Michael Sasse¹⁴, Giancarlo Scoppettuolo²,
Agnes Van Den Hoogen¹⁵, Gianluca Villa¹⁶, Lynn Hadaway¹⁷,
Marcia Ryder¹⁸, Gregory Schears¹⁹ and Josie Stone²⁰

TROMBOSI E GUAINA FIBROBLASTICA



Editorial

JVA | The Journal of
Vascular Access

Reconsidering the GAVeCeLT Consensus on catheter-related thrombosis, 13 years later

Fulvio Pinelli¹ , Paolo Balsorano¹ , Benedetta Mura²
and Mauro Pittiruti³ 

The Journal of Vascular Access
1–8
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2020

Review

JVA | The Journal of
Vascular Access

The fibroblastic sleeve, the neglected complication of venous access devices: A narrative review

Giovanna Passaro¹ , Mauro Pittiruti¹  and Antonio La Greca

The Journal of Vascular Access
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2020

STRAVASO



A new approach for early recognition of peripheral intravenous (PIV) infiltration: a pilot appraisal of a sensor technology in a neonatal population

2019

***Mr Matheus van Rens¹; Dr Kevin Hugill²; Ms Airene Velez Francia¹**

¹NICU, Women's Wellness and Research Center, Hamad Medical Corporation, PO Box 3050, Doha, Qatar

²Nursing and Midwifery, Education and Research, Hamad Medical Corporation, Qatar

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Mr Matheus van Rens, RN, MaANP, Director of Nursing and Vascular Access, NICU, Women's Wellness and Research Center, Hamad Medical Corporation, PO Box 3050, Doha, Qatar

Email mrens@hamad.qa

Optical detection of infiltration during peripheral intravenous infusion in neonates

Journal:	<i>The Journal of Vascular Access</i>
Manuscript ID	JVA-23-0128
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2023, in press

PROTOCOLLI DI INSERZIONE

V Convegno Nazionale GAVePed



- Il protocollo ISCaVO per il catetere venoso ombelicale (15') – **Giovanni Barone**
- Il protocollo ISiCEC per il catetere epicutaneo-cavale (15')
– **Vito D'Andrea**
- Il protocollo ISAC-Ped per PICC, CICC e FICC (15')
– **Maria Giuseppina Annetta**
- Protocollo di impianto dei port in età pediatrica (15')
– **Alessio Pini Prato**
- I vantaggi della tunnellizzazione: il protocollo RAVESTO (15')
– **Matthew Ostroff** (videoregistrazione)

2022



Umbilical Venous Catheter Update: A Narrative Review Including Ultrasound and Training

Vito D'Andrea^{1*}, Giorgia Prontera¹, Serena Antonia Rubortone¹, Lucilla Pezza¹, Giovanni Pinna¹, Giovanni Barone², Mauro Pittiruti³ and Giovanni Vento¹

¹ Division of Neonatology, Department of Woman and Child Health and Public Health, University Hospital Fondazione Policlinico Gemelli Istituto di Ricovero e Cura a Carattere Scientifico (IRCCS), Rome, Italy, ² Neonatal Intensive Care Unit, Infermi Hospital, Rimini, Italy, ³ Department of Surgery, University Hospital Fondazione Policlinico Gemelli Istituto di Ricovero e Cura a Carattere Scientifico (IRCCS), Rome, Italy

Editorial

2019

JVA | The Journal of
Vascular Access

Epicutaneo-caval catheters in neonates: New insights and new suggestions from the recent literature

Giovanni Barone¹  and Mauro Pittiruti²

The Journal of Vascular Access
2020, Vol. 21(6) 805–809
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ESEMPIO DI 'SCELTE SAGGE':
IL PROTOCOLLO ISAC-PED

Impianto Sicuro dell'Accesso Centrale Pediatrico

Si applica a tutti i CVC inseriti in vene profonde (CICC, PICC, FICC): in pratica, a tutti gli accessi centrali ecoguidati del bambino e del neonato, con la sola esclusione di ECC e CVO

APPLICAZIONE SISTEMATICA DEL BUNDLE ISAC-PED: ZERO COMPLICANZE ALL'INSERZIONE

Original research article

JVA | The Journal of
Vascular Access

**Centrally inserted central catheters
in preterm neonates with weight below
1500 g by ultrasound-guided access to the
brachio-cephalic vein**

The Journal of Vascular Access
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Giovanni Barone¹, Mauro Pittiruti², Gina Ancora¹,
Giovanni Vento³, Francesca Tota⁴ and Vito D'Andrea³

2020

Original research article

JVA | The Journal of
Vascular Access

**Ultrasound-guided cannulation of
the brachiocephalic vein in newborns:
A novel approach with a supraclavicular
view for tip navigation and tip location**

The Journal of Vascular Access
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Ferdinando Spagnuolo and Teresa Vacchiano

2021

Clinical trial protocol

JVA | The Journal of
Vascular Access

**A GAVeCeLT bundle for central venous
catheterization in neonates and children:
A prospective clinical study on 729 cases**

The Journal of Vascular Access
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Mauro Pittiruti¹, Davide Celentano², Giovanni Barone³,
Vito D'Andrea⁴, Maria Giuseppina Annetta⁵ and Giorgio Conti²

2022

Original research article

JVA | The Journal of
Vascular Access

**Catheter-related complications in
onco-hematologic children:
A retrospective clinical study on
227 central venous access devices**

The Journal of Vascular Access
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Maria Giuseppina Annetta¹, Davide Celentano²,
Lucrezia Zumstein³, Giorgio Attinà³, Antonio Ruggiero³,
Giorgio Conti¹ and Mauro Pittiruti⁴

2022

Techniques in vascular access

JVA | The Journal of
Vascular Access

Rapid Assessment of Vascular Exit Site and Tunneling Options (RAVESTO): A new decision tool in the management of the complex vascular access patients

Matthew D Ostroff¹ , Nancy Moureau² and Mauro Pittiruti³ 

The Journal of Vascular Access
1-7

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EDUCAZIONE E TRAINING

V Convegno Nazionale GAVePed



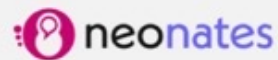
- Un progetto europeo sull'accesso venoso neonatale: il gruppo NEVAT (15') - **Fiammetta Piersigilli**
- La esperienza dei corsi GAVePed sull'accesso venoso neonatale (15') - **Vito D'Andrea**

V Convegno Nazionale GAVePed

*Accessi venosi nel
neonato e nel bambino*



Palacongressi, Rimini
15 - 16 maggio 2023



Con il supporto incondizionato di Vygon

SIMPOSIO - 16 MAGGIO

Ore 13:30 – 14:30 – Sala Arengo

“Presentazione ufficiale del gruppo NEVAT
(Neonatal European Vascular Access Team)”
(in traduzione simultanea)

Cosa è il NEVAT: costituzione e finalità del gruppo

– Dott.ssa Fiammetta Piersigilli

Progetti attuali e futuri

– Dott. Giovanni Barone

Il nuovo ruolo della venipuntura ecoguidata

– Dott. Christian Breschan

L'importanza dei team di accessi vascolari

– Dott. Roland Van Rens

Il nuovo standard: ecografia per la tip location

– Dott. Vito D'Andrea

La colla e le altre novità nella gestione del sito di emergenza

– Dott.ssa Carmen Rodriguez

Q&A – **discussione con il pubblico**

Presentazione del sito web del NEVAT

– Suzy Van Eenoo

Conclusioni

CONCLUSIONI

OCCORRE ABBANDONARE LE VECCHIE ABITUDINI PERICOLOSE E COSTOSE

- **Abbandonare la fluoroscopia**
- **Abbandonare la venolisi**
- **Abbandonare la puntura alla cieca**
- **Abbandonare il controllo radiologico**
- **Abbandonare i punti di sutura**
- **Abbandonare i cateteri in silicone**
- **Abbandonare i cateteri valvolati**

OCCORRE INVECE FARE SCELTE 'SAGGE'

I) Utilizzare in modo 'globale' l'ecografo

- Scelta della vena
- Puntura ecoguidata
- Esclusione complicanze immediate
- Tip navigation
- Tip location
- Esclusione complicanze tardive non infettive

OCCORRE INVECE FARE SCELTE 'SAGGE'

- 2) Utilizzare l'ECG intracavitario**
- 3) Scegliere razionalmente il sito di emergenza (tunnellizzare!)**
- 4) Stabilizzare il catetere e proteggere il sito di emergenza**

SECURE & PROTECT:

ancoraggio sottocutaneo

colla in cianoacrilato

membrane semipermeabili ad alto MVTR

Ultrasound Guided Vascular Access

Practical Solutions to Bedside
Clinical Challenges

Matthew D. Ostroff
Mark W. Connolly



Università Cattolica del Sacro Cuore – Roma

in collaborazione con ASL Romagna

in collaborazione con GAVeCeLT

in collaborazione con GAVePed



MASTER UNIVERSITARI IN ACCESSI VENOSI PEDIATRICI E NEONATALI

Master di I livello per infermieri
NURSING DEGLI ACCESSI VENOSI PEDIATRICI E NEONATALI

Master di II livello per medici
ACCESSI VENOSI NEL BAMBINO E NEL NEONATO

A partire dall'Anno Accademico 2020-2021, avranno inizio presso la Università Cattolica di Roma i primi Master Universitari italiani specificamente dedicati agli accessi venosi pediatrici e neonatali. La domanda per richiedere la iscrizione ai Master va inoltrata tramite il sito della Università Cattolica entro il 14 dicembre 2020.
Le lezioni, i workshop e periodi di tirocinio clinico si svolgeranno nell'anno 2021.

Docenti dei Master: Gina Ancora, Giovanni Barone, Michela Bevilacqua, Daniele G. Biasucci, Antonella Capasso, Davide Celentano, Rita Celli, Antonio Chiaretti, Giorgio Conti, Alessandro Crocchi, Vito D'Andrea, Laura Dockett, Alessandro Emoli, Aldo Mancino, Bruno Marche, Rossella Mastroianni, Andrea Musarò, Lidia Muscheri, Alessio Pini Prato, Mauro Pittiruti, Nicola Pozzi, Carmen Rodriguez, Francesca Rossetti, Flavia Savelli, Grazia Scazzari, Giancarlo Scoppettuola, Luca Sidro, Cristina Taraschi, Federica Tosi, Francesca Tata, Giovanni Vento, Clelia Zanaboni, Geremia Zito
e altri esperti italiani del GAVePed – Gruppo Accessi Venosi Pediatrici



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Vascular Access in Neonates and Children

Daniele G. Biasucci
Nicola Massimo Disma
Mauro Pittiruti
Editors



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