

Indicazioni alla pseudo-tunnellizzazione



Dr. Stefano Benvenuti
Unità Aziendale Accessi Vascolari
A.S.S.T. Spedali Civili di Brescia, Italy

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Techniques in vascular access

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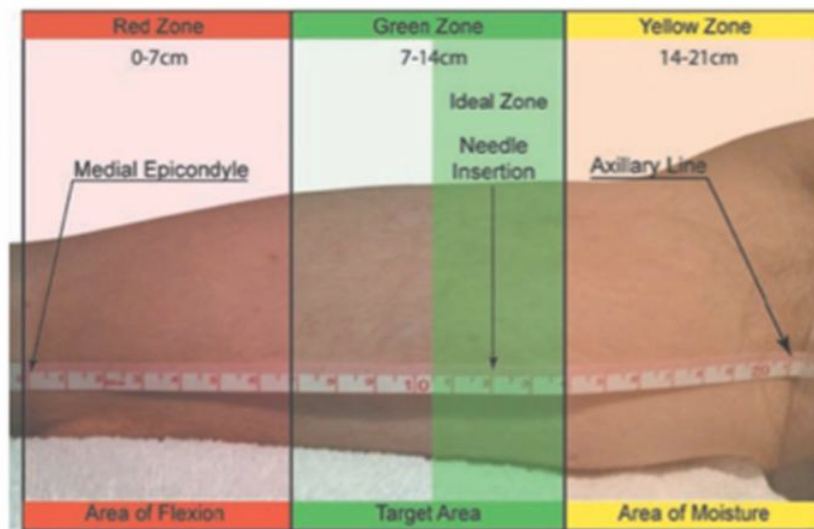
Rapid Assessment of Vascular Exit Site and Tunneling Options (RAVESTO): A new decision tool in the management of the complex vascular access patients

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Matthew D Ostroff¹ , Nancy Moureau² and Mauro Pittiruti³ 

Table 1. RAVESTO—Rapid Assessment of Vascular Exit Site and Tunneling Options.

Central venous access device	Type and path of tunnel	Indications for tunneling
PICC	Tunnel to Dawson's green area	Puncture site in Dawson's yellow area; non-hospitalized patients with expected long intravenous treatment
CICC (supraclavicular puncture)	Tunnel to infraclavicular area	Long term intravenous treatment in non-hospitalized patients (antibiotics, parenteral nutrition, chemotherapy); expected difficulties in management of the exit site in hospitalized patients (beard, humidity, tracheostomy, instability, etc.)
	Tunnel to arm	Compromised skin integrity of the chest area; oral or endotracheal secretions over chest; implanted device on ipsilateral chest; chest surgery; contracted shoulder; etc.
	Tunnel to back	Cognitive disorder resulting in device removal; contraindication to chest or arm exit site
CICC (infraclavicular puncture)	Tunnel to lower chest	Long term intravenous treatment in non-hospitalized patients (antibiotics, parenteral nutrition, chemotherapy); expected problems in management of the exit site in hospitalized patients (tracheostomy, etc.)
	Tunnel to arm	Compromised skin integrity of the chest area; oral or endotracheal secretions over chest; implanted device on ipsilateral chest; chest surgery; contracted shoulder; etc.
	Tunnel to back	Cognitive disorder resulting in device removal; contraindication to chest or arm exit site
FICC (puncture at the groin)	Tunnel to the abdomen	Non-emergency line in walking patients with contraindication to PICC/CICC
	Tunnel to mid-thigh	Non-emergency line in bedridden patients with contraindication to PICC/CICC
FICC (puncture at mid-thigh)	Tunnel to the abdomen	Non-emergency line in walking patients with contraindication to PICC/CICC
	Tunnel to distal thigh	Long term intravenous treatment in bedridden patients with contraindication to PICC/CICC



**PICC Zone Insertion Method™ (ZIM™):
 A Systematic Approach to Determine the Ideal Insertion
 Site for PICCs in the Upper Arm**

Robert B. Dawson
 MSA, BSN, RN, CRNI, CPUI, VA-BC

“Pseudo-tunneling” can be performed with all access devices and involves a single puncture (Figure 10). By this method, the venipuncture device (needle or catheter-over-needle) creates a long subcutaneous trajectory before reaching the vessel.⁵ This technique has also been defined as “extended subcutaneous route.”¹⁶ Considering that tunneling is defined as that technique where the entry site of the needle into the skin (puncture site) is different from the catheter exit site, the “extended subcutaneous route” cannot be regarded as a real tunneling, hence the term “pseudo-tunneling.” This technique has limited indications since the exit site can be moved only few centimeters far from the venipuncture site. It may be useful in neonates, in children and in PICCs requiring short tunneling.

**Management of antithrombotic
treatment and bleeding disorders in
patients requiring venous access devices:
A systematic review and a GAVeCeLT
consensus statement**

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Maria Giuseppina Annetta¹, Sergio Bertoglio² ,
Roberto Biffi³ , Fabrizio Brescia⁴ , Igor Giarretta⁵,
Antonio La Greca¹, Nicola Panocchia⁶, Giovanna Passaro⁷ ,
Francesco Perna⁸, Fulvio Pinelli⁹ , Mauro Pittiruti¹ ,
Domenico Prisco¹⁰, Tommaso Sanna⁸ and Giancarlo Scoppettuolo¹

- a. **Minimally invasive** venous access procedure: insertion or removal of the following VADs: short peripheral cannulas; long peripheral catheters (mini-midline); midline catheters; non-tunneled PICCs; non-tunneled FICCs at mid-thigh (access to the superficial femoral vein)
- b. **Moderately invasive** venous access procedures— insertion or removal of the following VADs: non-tunneled CICC; non-tunneled FICCs at the groin (access to the common femoral vein); tunneled PICCs; nontunneled dialysis catheters
- c. **Highly invasive** venous access procedures— insertion or removal of the following VADs: tunneled CICC; tunneled FICCs; tunneled-cuffed dialysis catheters; ports (including PICC-ports, chest-ports, and femoral ports)

Original research article

Safety and complications associated with tunneling and pseudotunneling techniques during PICC and Midline insertion

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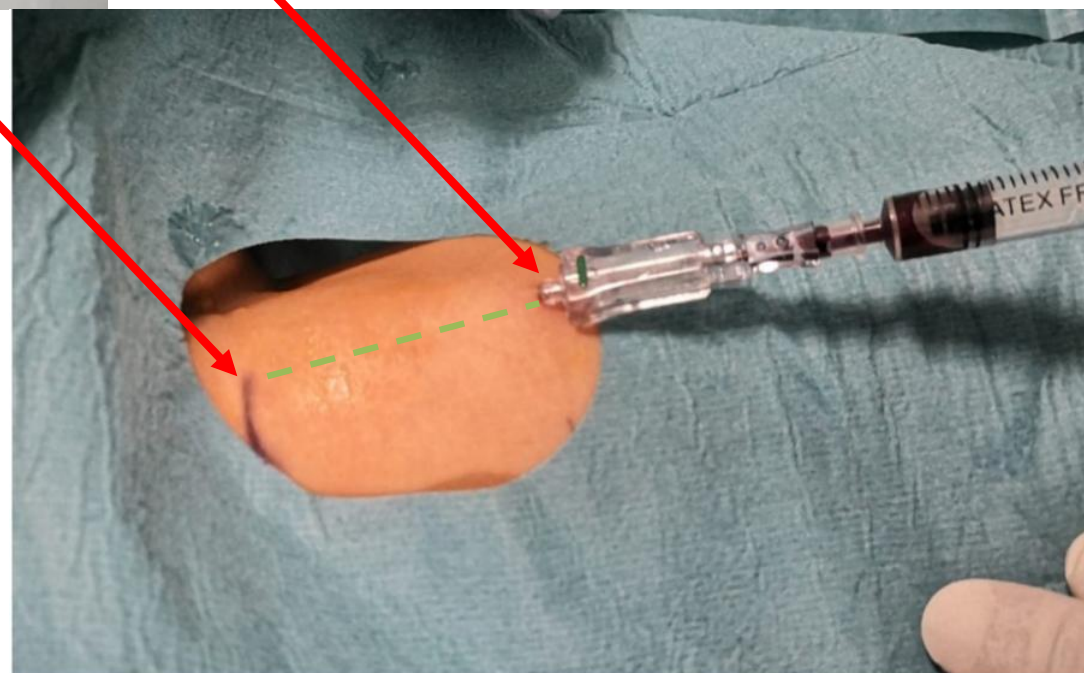
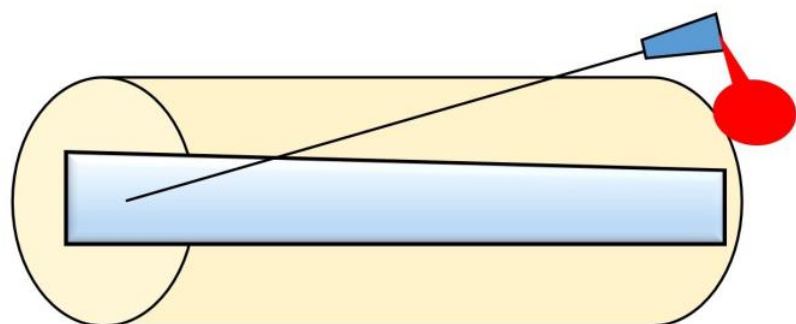
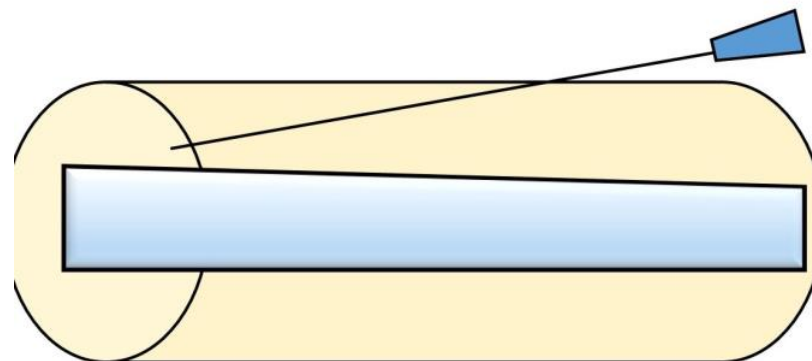
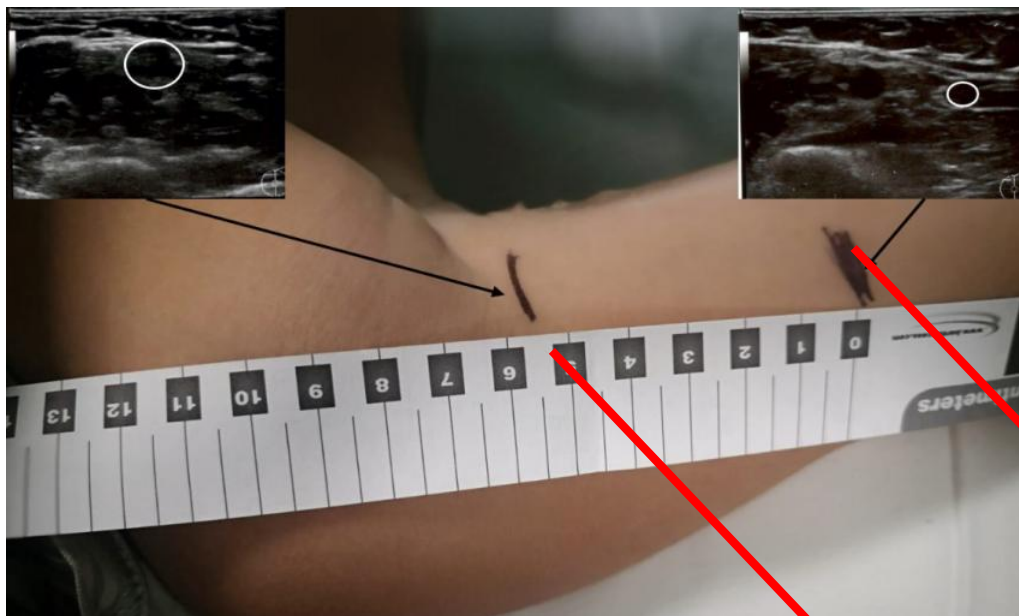


Stefano Elli^{1,2} , Silvia Cavalli^{1,2}, Valentina Fantini³,
Marco Fragapane⁴, Nicola Salvoldi³, Paolo Zappa⁵,
Daniela Zedde⁶, Sabrina Impaziente⁷ and Dario D'Amata⁸

Conclusions: The findings of this study suggest that both standard and pseudo-tunnels provide comparable levels of safety and comfort for patients. It was noted that Pseudotunnel offers an equivalent level of safety for patients with coagulation disorders related to PLT and INR, rendering it comparable to a “minimally invasive procedure,” which necessitates the same precautions as a non-tunneled PICC.

Altre indicazioni?

- Utilizzo dei PICC e dei Midline secondo certificazione MDR
- Consente di distanziare l'exit site dal sito di venipuntura anche a personale di VAT non autorizzate ad eseguire la tunnellizzazione standard



Pseudo-tunneling procedure: An easy technique for insertion of PICCs and Midline catheters in patients with small veins of the arm

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Stefano Benvenuti^{1,2} , Elena Porteri¹, Rosanna Ceresoli¹,
Cristian Pintossi¹, Caterina Annovazzi¹, Francesca Zanatta¹ and
Daniele Alberti^{2,3}

Conclusions: Our data suggest pseudo-tunneling technique is a safe and effective procedure for of Peripherally Inserted Central Catheters and Midline insertion avoiding central venous catheterization even in patient with small vein at the arms.

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ORIGINAL ARTICLE

Pseudo-tunneling procedure: an advantageous and safe technique for brachial catheters in younger children

Stefano BENVENUTI ^{1, 2} *, Elena PORTERI ¹, Rosanna CERESOLI ¹⁻³, Cristian PINTOSSI ¹,
Caterina ANNOVAZZI ¹, Francesca ZANATTA ¹, Fulvio PORTA ³, Daniele ALBERTI ^{4, 5}

Conclusions: Our data suggests that pseudo-tunneling is a safe and effective procedure for brachial device implants to avoid central venous catheterization even in pediatric patients.

Results

From January 2014 to August 2022 150 PICCs and 221 midlines were insert in patients with too small deep veins at the middle third of the arm with this technique, 60 and 113 respectively in pediatric patients.

Of 371 procedures only 40 pediatric patients required general anesthesia because other painful procedures needed to be performed at the same time of PICC insertion in 38 patients, and in 2 cases the children were younger than 5 years old.

In adult patients the pseudo-tunneling technique was applied successfully at the first time in 85% of patients and at the second attempt in 15% of procedures; in children 79% of procedures succeeded at the first attempt while 21% required a second attempt. None of these procedures ended unsuccessfully.



Spedali Civili di Brescia

Ospedale dei bambini*

Montichiari

Gardone V.T.



* Solo pz pediatrici non sedati

Dr. Stefano Benvenuti
UNITA' AZIENDALE ACCESSI VASCOLARI
A.S.S.T. Spedali Civili di Brescia
Mail: stefano.benvenuti@asst-spedalivicivi.it



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