

GAVeCeLT 2022
Roma, 5-6-7 dicembre

GAVeCeLT
Gestione Assistenza
Vaccinale Emergenza
Crisi e Long COVID

Le Dislocazioni

UNIVERSITÀ DEGLI STUDI
MILANO
BICOCCA

Stefano Elli
Picc Team ASST Monza
Dipartimento emergenza urgenza – Direttore Prof. Giuseppe Foti
Università degli Studi Milano-Bicocca
www.mastermonza.com



Sistema Socio Sanitario
 Regione
Lombardia
ASST Monza

Dislocazione

Si vede

Non si vede

Personale sanitario
Paziente
Caregiver



Contents lists available at [ScienceDirect](#)

International Journal of Nursing Studies

journal homepage: www.elsevier.com/ijns



Peripheral intravenous catheter failure: A secondary analysis of risks from 11,830 catheters

6-8%

Nicole Marsh^{a,b,c,g,j,*}, Emily N Larsen^{a,b,c,f,i}, Mari Takashima^{a,c,f,i,j}, Tricia Kleidon^{a,b,c,f,g},
Samantha Keogh^{a,b,g}, Amanda J Ullman^{a,b,c,f,j}, Gabor Mihala^{a,d,e,f,i}, Vineet Chopra^{a,h},
Claire M Rickard^{a,b,c,j}





Contents lists available at ScienceDirect

International Journal of Nursing Studies

journal homepage: www.elsevier.com/ijns



Peripheral int
from 11,830 c

Nicole Marsh^{a,b,c}
Samantha Keogh
Claire M Rickard

Therapeutics and Clinical Risk Management

Open Access Full Text Article

11,9%

Risk Factors for Midline Catheter Failure: A Secondary Analysis of an Existing Trial

Amit Bahl¹, Steven Johnson¹, Nicholas Mielke², Nai-Wei Chen³

Dovepress

open access to scientific and medical research

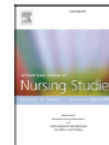
ORIGINAL RESEARCH



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International Journal of Nursing Studies

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Peripheral intravenous catheter failure: secondary analysis of risks from 11,830 catheters



Nicole Marsh^{a,b,c,g,i,j,*}, Emily N. Larsen^a,
Samantha Keogh^{a,b,g}, Amanda J. Ullman^a,
Claire M. Rickard^{a,b,c,j}



NIH Public Access
Author Manuscript

JAMA Pediatr. Author manuscript; available in PMC 2014 May 01

Published in final edited form as:

JAMA Pediatr. 2013 May 1; 167(5): 429–435. doi:10.1001/jamapediatrics.2013.775.

Therapeutics and Clinical Risk

Open Access Full Text Article

11,
Risk Factors for M
A Secondary Anal

Amit Bahl¹, Steven Johnson¹, Nicholas Mielke², Nai-Wei Chen³

Risk Factors for Peripherally Inserted Central Venous Catheter Complications in Children

Ketan Jumani, BDS, MPH¹, Sonali Advani, MBBS, MPH¹, Nicholas G. Reich, Ph.D.³, Leslie Gosey, RN, MS⁴, and Aaron M. Milstone, MD, MHS^{1,2}

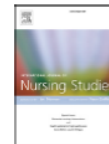
4,6%



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Peripheral
from 11,830

Nicole Marsh^a
Samantha Keo
Claire M Ricka

The Practice and Complications of Midline Catheters: A Systematic Review

OBJECTIVE: Midline catheters are considered “midway” regarding vascular access. The objective of this systematic review was to explore the current practice, dwell time, and complication rates of midline catheters.

DESIGN: Systematic review.

SETTING: Search on four databases, PubMed, CINAHL, Scopus, and Embase, were conducted for English language articles published after the year 2000.

Sandeep Tripathi, MD, MS¹

Shruti Kumar, BLA²

Shubhi Kaushik, MBBS³

Therapeutics

Open Access Full Text Article

Risk Factors

A Secondary Analysis of an Existing Trial

Amit Bahl¹, Steven Johnson¹, Nicholas Mielke², Nai-Wei Chen³

Risk Factors for Peripherally Inserted Central Venous Catheter Complications in Children

Ketan Jumani, BDS, MPH¹, Sonali Advani, MBBS, MPH¹, Nicholas G. Reich, Ph.D.³, Leslie Gosey, RN, MS⁴, and Aaron M. Milstone, MD, MHS^{1,2}

3,775.

Dislocazione

Problema acuto
(si sviluppa repentinamente)



Totale

Perdita dell'accesso

Parziale

Perdita delle caratteristiche originarie

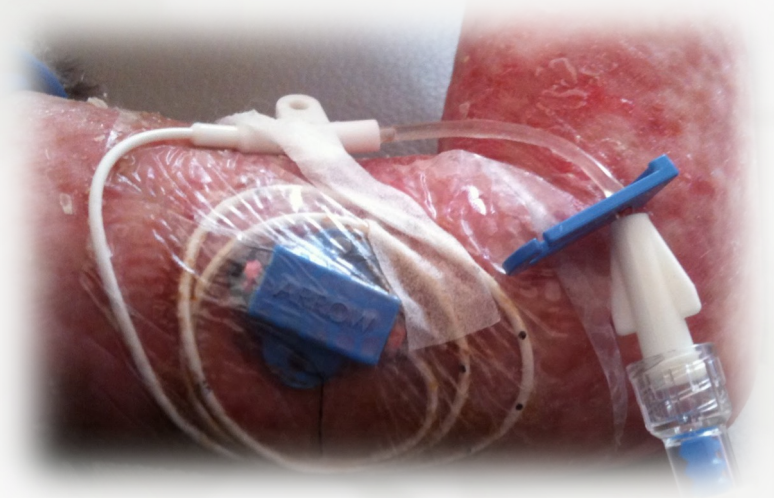
Perdita della funzionalità

Aumento delle complicanze

Necessità di reimpianto

Dislocazione

*Problema cronico
(si sviluppa lentamente)*



Progressiva Perdita delle caratteristiche originarie

Progressiva Perdita della funzionalità

Aumento delle complicanze

Necessità di reimpianto

- view, using the “bubble test”: see the ECHOTIP protocol)
- Step 8** Appropriate securement of the catheter and protection of the exit site—**use sutureless devices only;** reduce the risk of bleeding and bacterial contamination using cyanoacrylate glue and semi-permeable transparent membrane dressings



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

The Journal of Vascular Access
1–9
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DOI: 10.1177/11297298221099838
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Infusion Therapy Standards of Practice

- A. Use a securement method (integrated securement device [ISD]; subcutaneous anchor securement system [SASS], tissue adhesive (TA) or adhesive securement device [ASD]), in addition to the primary dressing, to stabilize and secure VADs. Inadequate securement can cause unintentional dislodgement and complications requiring premature removal.



*Perché, a volte, i sutureless devices
non fanno il loro dovere?*

STATLOCK >4 KG

GRIPLOK >4 KG

WING GUARD > 4 KG

SORBAVIEW S. >4 KG



Infusion Therapy Standards of Practice

Change transparent semipermeable membrane (TSM) dressings at least every 7 days (except neonatal patients) or immediately if dressing integrity is disrupted (eg, **lifted/detached on any border edge or within transparent portion of dressing;** visibly soiled; presence of **moisture, drainage, or blood**) or compromised skin integrity is present under the dressing.^{• 2,4,5,8-10} (III)

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

The Journal of Vascular Access
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Conclusions of the panel. There is evidence of costeffectiveness of SAS if compared to skin adhesive securement, particularly in selected categories of adult patients such as patients with central VADs for more than 4 weeks (especially if not hospitalized), in noncollaborative older patients with cognitive disorders (even if, in such subsets of patients, the effectiveness of SAS might be lower than 100%), in patients with skin disorders that may reduce the applicability or effectiveness of adhesive securement, and in all patients with a high risk of VAD dislodgment.

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 Konstantinou¹⁹, Matt Jones²⁰, Hervé Rosay²¹, Liz Simcock²², Marguerite Stas²³ and Gilda Pepe¹⁵



**GAVeCeLT-WoCoVA Consensus on
subcutaneously anchored securement
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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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DOI: 10.1177/11297298211034306

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 **SAGE**

Case report

JVA | The Journal of
Vascular Access

Alternative exit sites for central venous access: Back tunneling to the scapular region and distal tunneling to the patellar region

Matthew D Ostroff¹  and **Mauro Pittiruti²** 

The Journal of Vascular Access
2021, Vol. 22(6) 992–996
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Thanks to Matthew Ostroff and Mauro Pittiruti

Case report

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JVA | The Journal of
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Figure 2. Double tunnel from the femoral vein to the patellar region.

Thanks to Matthew Ostroff and Mauro Pittiruti

Alternative exit sites for central venous access: Back tunneling to the scapular region and distal tunneling to the patellar region

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Image 1. Original axillary central venous catheter placement which was pulled out after 8 h.



Image 2. Three French Catheter with exit site to the medial dorsal thoracic region after double tunnel to the jugular vein.



Figure 2. Double tunnel from the femoral vein to the patellar region.

Thanks to Matthew Ostroff and Mauro Pittiruti

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Matthew D Ostroff¹  and Mauro Pittiruti² 



Double back tunnel from the jugular vein to the scapular region.



Figure 2. Double tunnel from the femoral vein to the patellar region.



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Image 2. Three French Catheter with exit site to the medial dorsal thoracic region after double tunnel to the jugular vein.

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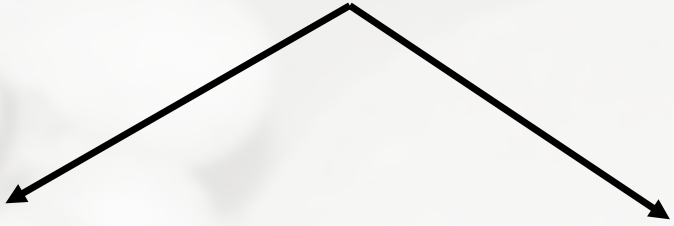
Portare l'exit site in una posizione più sicura



Dislocazione

Si vede

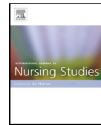
Non si vede



Dislocazione

Non si vede

*Aumento Pressione intratoracica
Iniezione Mezzo di Contrasto
Malformazioni vascolari*

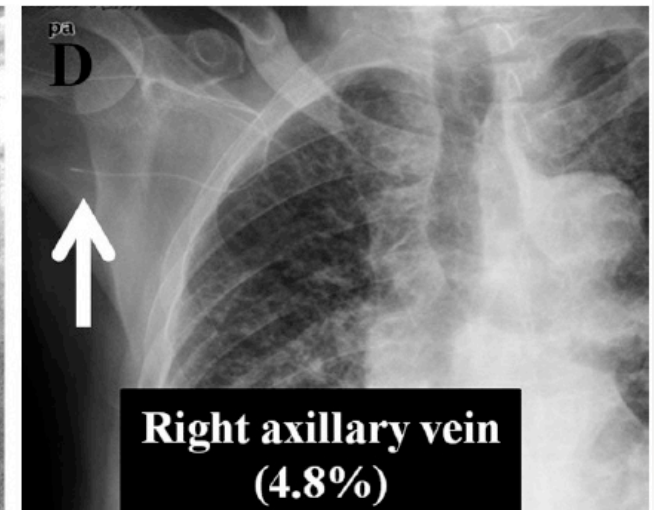
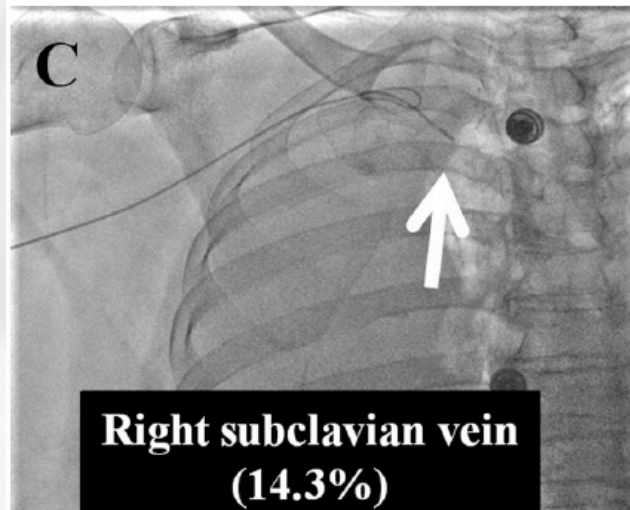
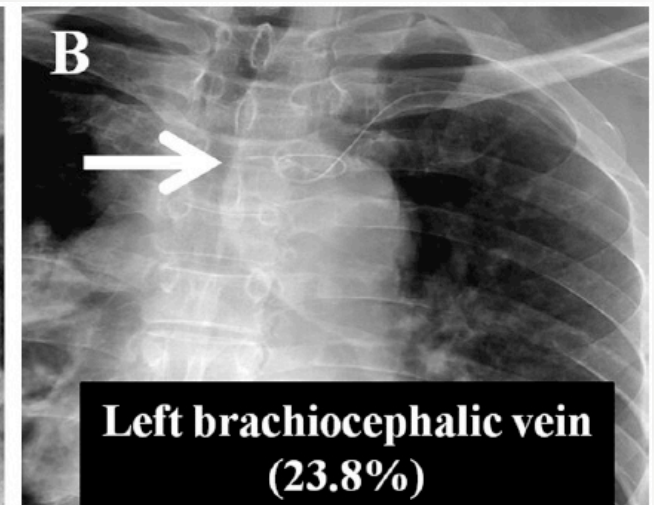
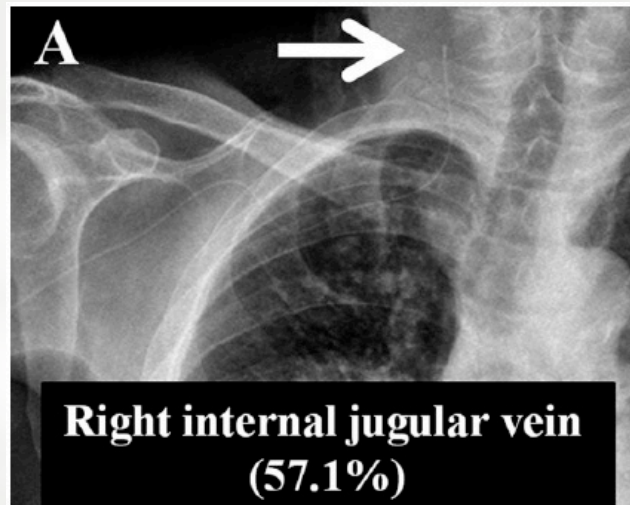


Incidence, risk factors and clinical outcomes of peripherally inserted central catheter spontaneous dislodgment in oncology patients: A prospective cohort study

Xiao-xia Qiu^{a,1}, Yan Guo^{a,1}, Hong-bin Fan^a, Jie Shao^a, Xue-bin Zhang^{a,b,*}

^a Cancer Center, Renji Hospital, School of Medicine, Shanghai JiaoTong University, Shanghai 200127, China

^b Department of Interventional Radiology, Renji Hospital, School of Medicine, Shanghai JiaoTong University, Shanghai 200127, China



- *Lunghezza del catetere*
- *Rigidità del catetere*
- *Diametro della vena ospite*
- *Velocità di iniezione MDC*

CASE REPORT

Tip Migration Post-Contrast Pressure Injection Through Pressure-Injectable Peripherally Inserted Central Catheters Causing Vascular Injury: A Report of 3 Cases

Michelle Craigie¹  · Louise Meehan¹ · John Harper¹

PICC tip migration post-contrast pressure injection is an under-recognized complication. If missed, it has serious implications for patients including perforation, extravasation and extravascular location of the PICC tip.

Tip Migration Post-Contrast Pressure-Injectable Peripherally Inserted Central Catheter Causing Vascular Injury: A Report

Michelle Craigie¹ · Louise Meehan¹ · John Harper¹

PICC tip migration post-contrast under-recognized complication with implications for patients in the interventional radiology suite and extravascular location.

ORIGINAL ARTICLE

Power Injectable Peripherally Inserted Central Venous Catheter Lines Frequently Flip After Power Injection of Contrast

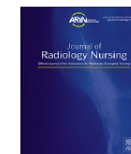
Luis Antonio Sosa Lozano, MD, Charles Marn, MD, and Lawrence R. Goodman, MD, FACR

Based on our study, catheter displacement is common (62%), with PIPICCS located cephalad to the TBA. Preliminary scout view should be checked before all PIPICC injections. If the PIPICC is proximal, consider a lower injection rate or repositioning. Always obtain a postscan scout.

Tip Migration Post-Contrast Pressure Injected Pressure-Injectable Peripherally Inserted Catheter Causing Vascular Injury: A Report of 3 Cases

Michelle Craigie¹ · Louise Meehan¹ · John Harper¹

PICC tip migration post-contrast under-recognized complication. It has implications for patients including catheter tip migration and extravascular location of contrast.



Power-Injectable Peripherally Inserted Central Catheter Tip Malposition After Power Injection of Intravenous Contrast Media for Computed Tomography Examinations

John J. Schmitz, MD ^{a,*}, Nicole M. Jensen, APRN, CNS, MS ^a,
Jane M. Kirmse, APRN, CNS, MS ^a, Gregory J. Schears, MD ^b, Lifeng Yu, PhD ^a,
Eric E. Williamson, MD ^a, Christopher P. Wood, MD ^a

^a Department of Radiology, Mayo Clinic, Rochester, Minnesota, USA

^b Department of Anesthesiology, Mayo Clinic, Rochester, Minnesota, USA

PICC tip malposition secondary to power injection of iodinated contrast media is common and readily identifiable. Obtaining both preinjection and postinjection topograms ensures appropriate catheter position during injection and upon patient departure. Rapid saline flush is a noninvasive maneuver that allows a high chance of successful repositioning of catheter tips. Power injection of contrast media through a power-injectable PICC is safe.

CASE REPORT

Peripherally Inserted Central Venous Catheter Tip Frequently Flip After Power Injection of Contrast

Marn, MD, and Lawrence R. Goodman, MD, FACP

Contrast flow rate and flow rate associated with the use of intravenous contrast media, catheter displacement is common and often associated cephalad to the TBA. Preliminary checked before all PIPICC injections. Consider a lower injection rate or repositioning. Always obtain a postscan scout.

Cardiovasc Intervent Radiol (2018) 41:509–512
DOI 10.1007/s00270-017-1828-5

CASE REPORT

Tip Migration Post-Contrast Pressure In Pressure-Injectable Peripherally Inserted Causing Vascular Injury: A Report of 3

PICC tip migration post-contrast under-recognized complication implications for patients inclusion and extravascular location



JVA

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J Vasc Access 2017; 18 (5): 419-425

DOI: 10.5301/jva.5000748

ORIGINAL RESEARCH ARTICLE

Repositioning of central venous access devices using a high-flow flush technique - a clinical practice and cost review

Timothy R. Spencer

Vascular Access Consultant, Sussex Inlet, NSW - Australia

Research originally performed at Intensive Care Department, Liverpool Health Service, Sydney - Australia

fluoroscopy). The HFFT technique can be described as a rapid manual flush using 10- to 20-cc 0.9% sterile sodium chloride, aseptically administered through the catheter via the distal lumen (to demonstrate the HFFT see Video 1 - Courtesy of

CLE

Inserted Central Venous Catheter Flip After Power Contrast

and Lawrence R. Goodman, MD, FACP

and flow rates associated with the use of intravenous contrast displacement is common cephalad to the TBA. Preliminary before all PIPICC injections. or a lower injection rate or re-scan scout.

2021: 335–338

ScienceDirect

by Nursing

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nursing

**al Catheter Tip
ous Contrast Media**



¹, Lifeng Yu, PhD ²,

power injection of iodinated contrast is identifiable. Obtaining both images ensures appropriate catheter tip position upon patient departure. Power injection maneuver that allows a high catheter tip. Power injection of contrast media through a power injectable PICC is safe.

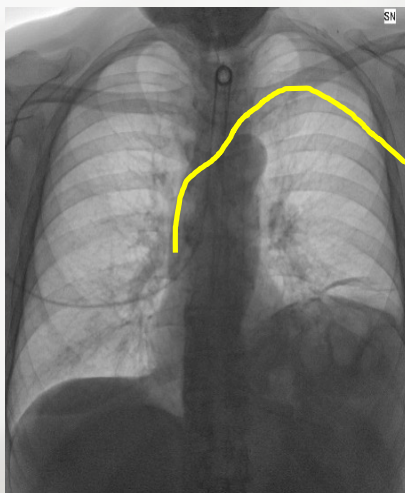
Repositioning of central venous access devices using a high-flow flush technique - a clinical practice and cost review

Timothy R. Spencer

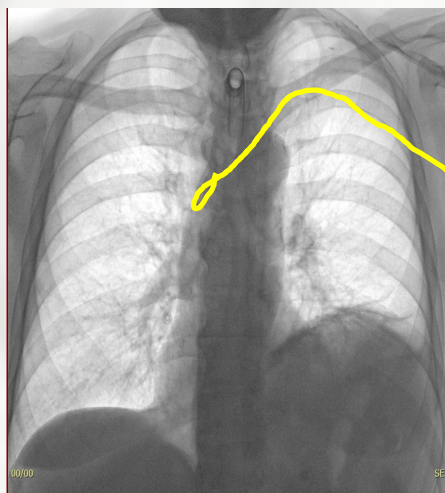
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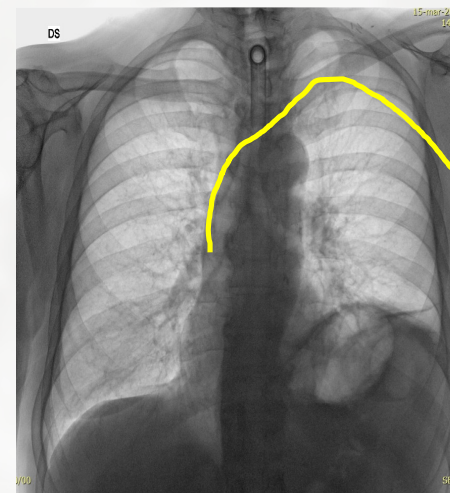
Before
CT



After
CT



After
Flush



Sono interessati anche i FICCs

Case report

Femorally inserted central catheter, migration and catheter damage during contrast media injection: A case report

Elli Stefano , Cavalli Silvia, Laura Scigliano, Mastroianni Gianluca and Rondelli Egle

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Se l'esame "vede" il catetere è facile...

(TC torace con Picc, TC addome con FICC...)

*Se l'esame non "vede" il catetere,
la dislocazione può restare misconosciuta*

(TC encefalo, segmenti corporei...)

- *Catetere morbido*
- *Catetere lungo*
- *Catetere non presente nelle scansioni*

- Catetere morbido
- Catetere lungo
- Catetere non presente nelle scansioni

Valutazione, post MDC,
della corretta posizione della punta.

- Catetere morbido
- Catetere lungo
- Catetere non presente nelle scansioni

Valutazione, post MDC,
della corretta posizione della punta.

Final scout scan?
ECG intracavitario?
ECHOTIP?

Take home messages

- Dislocazione: problema a volte subdolo
- Formazione degli operatori
- Attenzione all'integrità delle medicazioni
- Utilizzo SAS (lungo termine, pz. a rischio)
- Considerare le dislocazioni "invisibili" (tip migration)
- Prevenzione: scelta del dispositivo e dell'exit site (tunnellizzazione)

GAVeCeLT 2022
Roma, 5-6-7 dicembre

GAVeCeLT
Gestione delle Emergenze e delle Urgenze



Stefano Elli
Picc Team ASST Monza
Dipartimento emergenza urgenza – Direttore Prof. Giuseppe Foti
Università degli Studi Milano-Bicocca
www.mastermonza.com

Grazie

s.elli@asst-monza.it



Sistema Socio Sanitario
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