XII PICC Day

04/12/2018

La scelta della medicazione nel 2018: Efficacia, Costo-efficacia e rischio di MARSI

Marco Ariotti
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GAVeCeLT
Gli Accessi Venosi Centrali a Lungo Termine

La medicazione

Atto pratico che periodicamente consente di gestire in maniera ottimale il sito di emergenza dell'accesso vascolare

Obiettivi

- Prevenzione del rischio di contaminazione batterica per via extraluminale
- Prevenzione del rischio di dislocazione del catetere

Efficacia

= capacità di raggiungere l'obiettivo prefissato

Costo-efficacia

Valutazione impiegata per razionalizzare la scelta fra progetti alternativi.

L'analisi costo-efficacia individua la soluzione che, a parità di efficacia, minimizza il valore attuale dei costi (es. **diminuzione del tempo dedicato**) o il programma più efficace per un dato costo.

È largamente impiegata in tutti quei casi in cui è molto difficile, se non impossibile, una valutazione monetaria dei benefici.

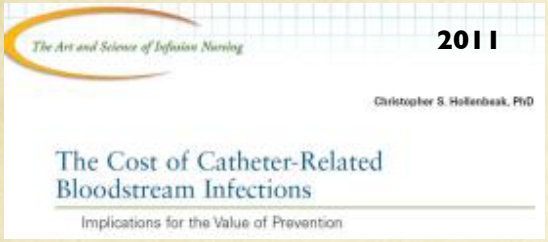
Nelle analisi di costo efficacia un peso rilevante è fornito dalla **diminuzione delle complicanze**, nell'ambito della Medicazione dell'accesso vascolare le **infezioni** e le **dislocazioni** possono comportare dei costi sanitari elevatissimi.

Costo CLABSI/CRBSI

TABLE 1
Summary of Articles Reporting the Cost of CRBSIs

Authors	N	Population	Design	Setting	Year	Cost	Reference
Digiovine et al	Cases = 30; Controls = 30	Critically ill adults	Retrospective pairwise matched cohort study	ICU	1999	$34 508	8
Warren et al	N = 1132	Critically ill adults	Prospective cohort study	ICU	2000	$11 971	5
Shannon et al	N = 54	Critically ill adults	Cohort series	ICU	2006	$40 179	9
Dimick et al	N = 260	Critically ill surgical patients	Prospective cohort study	Surgical ICU	1998	$56 167	10
Pittet et al	Cases = 86; Controls = 86	Critically ill surgical patients	Pairwise matched case-control study	Surgical ICU	1990	$33 268	2
Elward et al	Cases = 57; Controls = 30	Critically ill children	Prospective cohort study	Pediatric ICU	2000	$39 219	11
Kilgore et al	N = 1 355 647	Hospitalized adults	Retrospective cohort	Multiple centers	2006	$19 427	12

12.000 / 56.000 $



Infect Dis Clin N Am ■ (2017) ■–■
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0891-5520/17/Published by Elsevier Inc.

Prevention of Central Line–associated Bloodstream Infections

Taison Bell, MD*, Naomi P. O'Grady, MD

Other studies have estimated that CLABSIs account for between 84,000 and 204,000 infections per year, resulting in up to 25,000 preventable deaths at a cost of up to $21 billion per year.[5] There are several measures that can be taken to

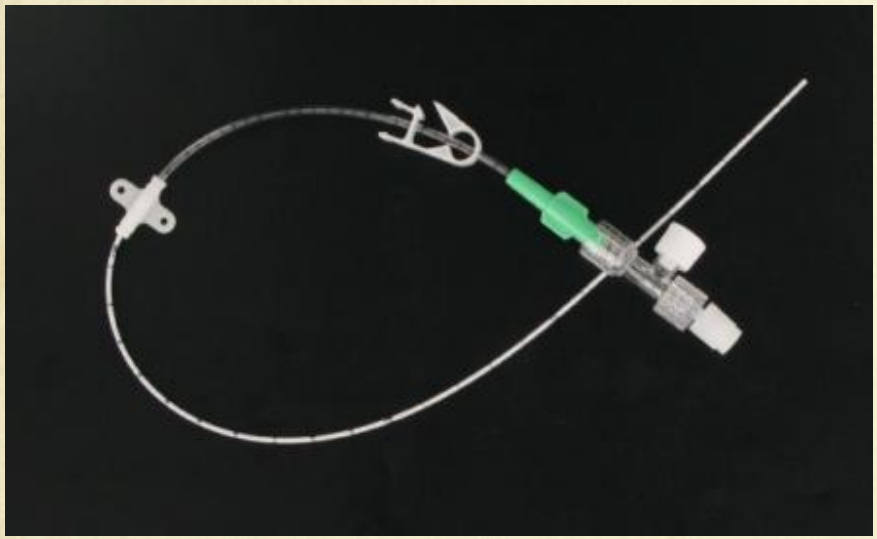
Costo posizionamento in ospedale

Costi Diretti e Indiretti
PICC Silicone *680.97 / 821.20 €*
PICC PUR *506.21 €*
Midline Silicone *409.91 €*
Midline PUR *305.33 €*

Tesi di Master NURSING ACCESSI VENOSI 2008: "*Fattibilità e potenziale Costo/Efficacia dell'inserzione infermieristica del Picc e Midline al domicilio*", De Lillas, UCSC Roma

Costo posizionamento a domicilio

MIDLINE PUR



COSTO IMPIANTO DOMICILIARE

CATETERE: 83 €

MATERIALE: 12 €

PERSONALE: 75 €

Totale: 170 €

Ariotti M., PICC Day 2013

PICC PUR con tecnica ECG: + 20 / 30 €

Tot: 200 €

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Costo efficacia dimostrata

(validata da linee guida)

Ariotti M. 04/12/18

1 - Igiene delle mani con Gel Idroalcolico

1. Perform hand hygiene procedures, either by washing hands with conventional soap and water or with alcohol-based hand rubs (ABHR). Hand hygiene should be performed before and after palpating catheter insertion sites as well as before and after inserting, replacing, accessing, repairing, or dressing an intravascular catheter. Palpation of the insertion site should not be performed after the application of antiseptic, unless aseptic technique is maintained [12, 77–79]. Category IB

16.1 Hand hygiene is performed routinely during patient care activities.

IVAD4 Hands must be decontaminated, with an alcohol-based hand rub or by washing with liquid soap and water if soiled or potentially contaminated with blood or body fluids, before and after any contact with the intravascular catheter or insertion site.

Class A

Available online at www.sciencedirect.com
Journal of Hospital Infection
journal homepage: www.elsevierhealth.com/journals/jhin
ELSEVIER

epic3: National Evidence-Based Guidelines for Preventing Healthcare-Associated Infections in NHS Hospitals in England

H.P. Loveday[a*], J.A. Wilson[a], R.J. Pratt[a], M. Golsorkhi[a], A. Tingle[a], A. Bak[a], J. Browne[a], J. Prieto[b], M. Wilcox[c]

40-60 sec

20-30 sec

2 - All-inclusive Kit

CHICAGO JOURNALS

SHEA
The Society for Healthcare Epidemiology of America

Strategies to Prevent Central Line–Associated Bloodstream Infections in Acute Care Hospitals: 2014 Update

4. Use an all-inclusive catheter cart or kit (quality of evidence: II).[45]

3 - Clorexidina 2%

IVAD23 Use a single-use application of 2% chlorhexidine gluconate in 70% isopropyl alcohol (or povidone iodine in alcohol for patients with sensitivity to chlorhexidine) to clean the central catheter insertion site during dressing changes, and allow to air dry.

Class A

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1. The preferred skin antiseptic agent is >0.5% chlorhexidine in alcohol solution.[3-5,9,10] (I)

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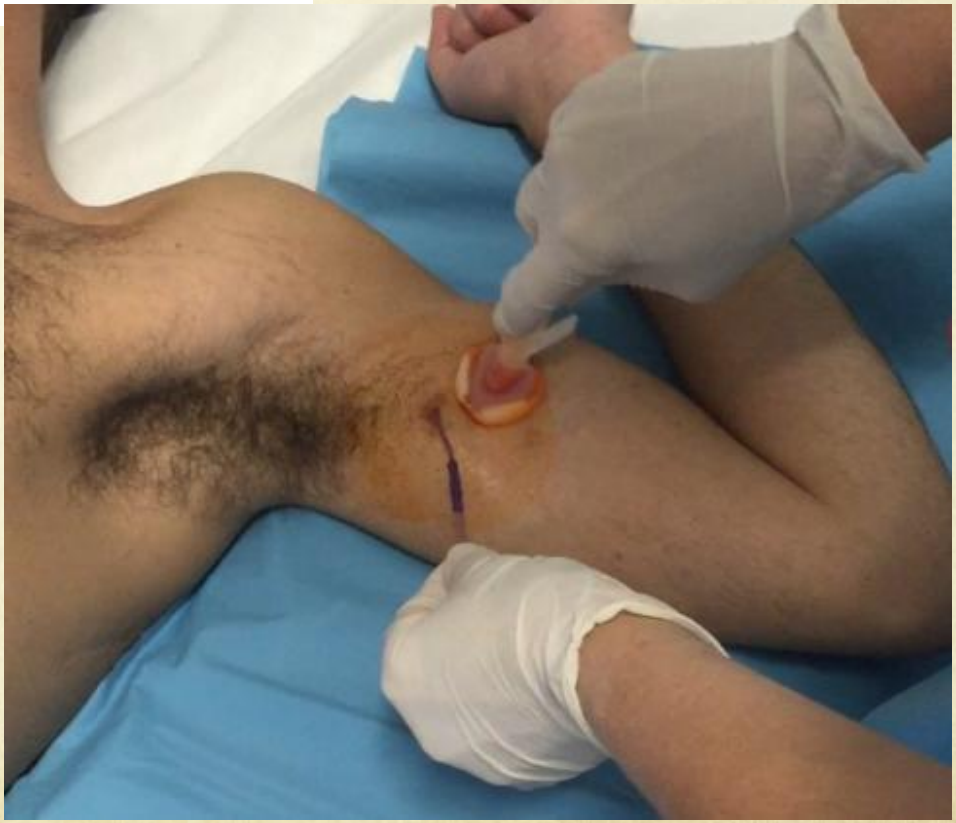

Ariotti M.

04/12/18

Clorexidina 2% (*rilascio continuo*)

1. Use a chlorhexidine-impregnated sponge dressing for temporary short-term catheters in patients older than 2 months of age if the CLABSI rate is not decreasing despite adherence to basic prevention measures, including education and training, appropriate use of chlorhexidine for skin antisepsis, and MSB [93, 96–98]. Category 1B

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IVAD20 Consider the use of a chlorhexidine-impregnated sponge dressing in adult patients with a central venous catheter as a strategy to reduce catheter-related bloodstream infection.

New recommendation *Class B*

5. Use chlorhexidine-impregnated dressings over CVADs to reduce infection risk when the extraluminal route is the primary source of infection. Even when organizations show a low baseline central line-associated bloodstream infection (CLABSI) rate, further reduction in CLABSI rate has been demonstrated with use of chlorhexidine-impregnated dressings. The efficacy of chlorhexidine dressings in long-term CVAD use, beyond 14 days when intraluminal sources of infection are the primary source, has not been shown.[18] (I)

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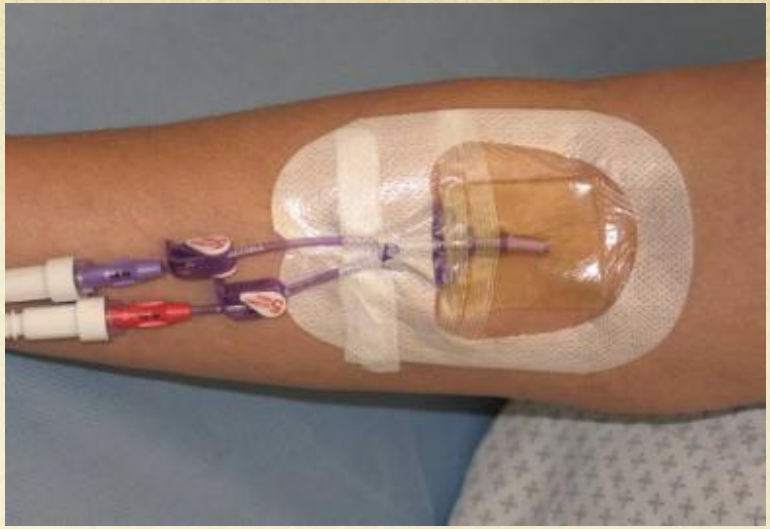

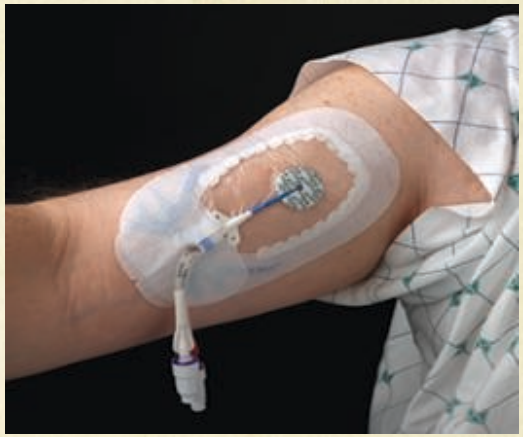

2017 Updated Recommendations on the Use of Chlorhexidine-Impregnated Dressings for Prevention of Intravascular Catheter-Related Infections

1. For patients aged 18 years and older:
   a. Chlorhexidine-impregnated dressings with an FDA-cleared label that specifies a clinical indication for reducing catheter-related bloodstream infection (CRBSI) or catheter-associated blood stream infection (CABSI) are recommended to protect the insertion site of short-term, non-tunneled central venous catheters. (Category IA)[8-12]

4 - Garza vs. Membrana Semipermeabile Trasparente

Catheter Site Dressing Regimens

1. Use either sterile gauze or sterile, transparent, semipermeable dressing to cover the catheter site [84–87]. Category IA
2. If the patient is diaphoretic or if the site is bleeding or oozing, use a gauze dressing until this is resolved [84–87]. Category II
3. Replace catheter site dressing if the dressing becomes damp, loosened, or visibly soiled [84, 85]. Category IB

Catheter and catheter site care

IVAD17 Use a sterile, transparent, semi-permeable polyurethane dressing to cover the intravascular insertion site.
Class D/GPP

IVAD19 Use a sterile gauze dressing if a patient has profuse perspiration or if the insertion site is bleeding or leaking, and change when inspection of the insertion site is necessary or when the dressing becomes damp, loosened or soiled. Replace with a transparent semi-permeable dressing as soon as possible.
Class D/GPP

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Journal of Hospital Infection
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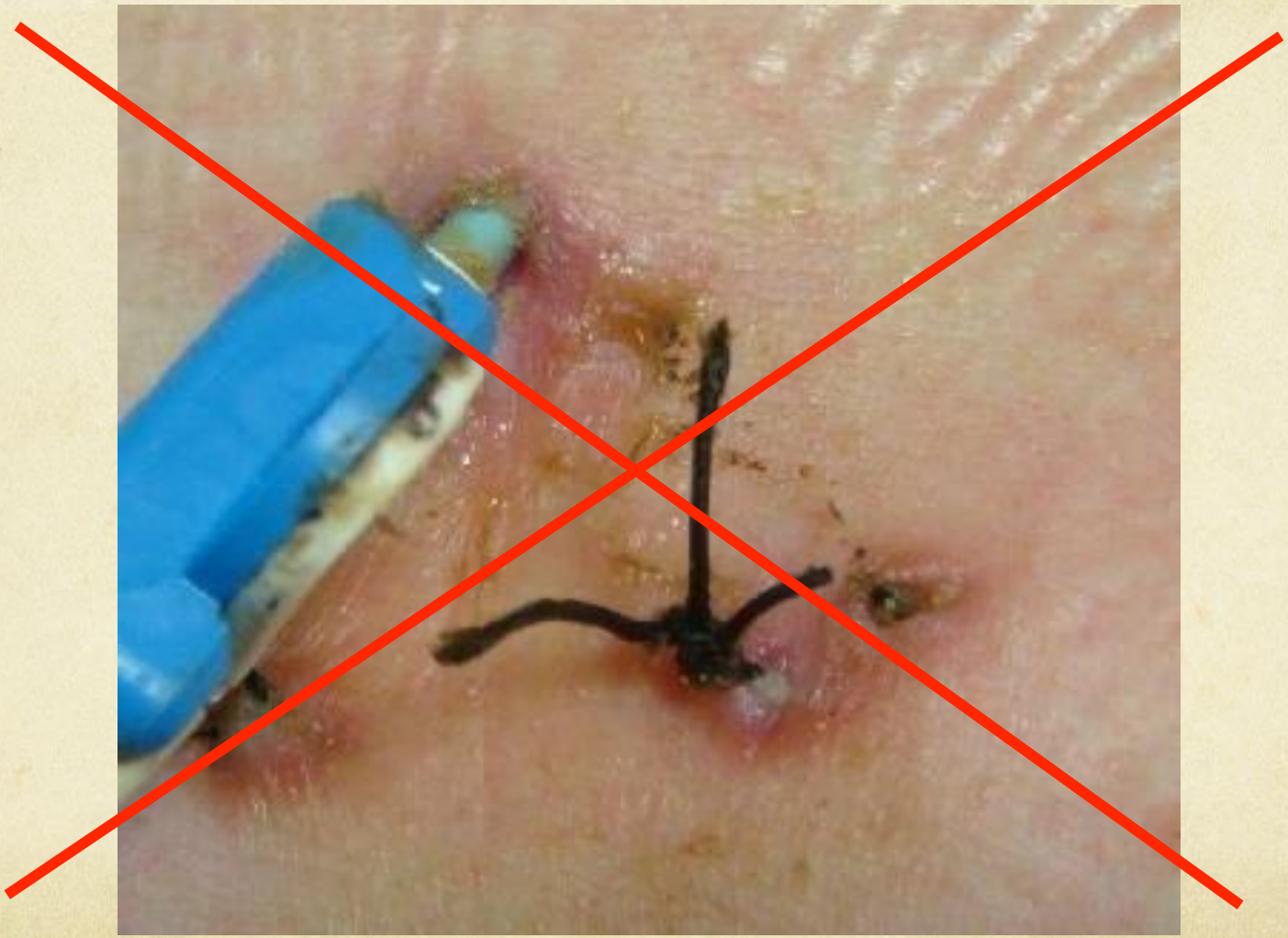
Membrana Semipermeabile Trasparente

H. Perform dressing changes on CVADs and midline catheters at a frequency based on the type of dressing.

1. Change transparent semipermeable membrane (TSM) dressings at least every 5 to 7 days and gauze dressings at least every 2 days; research has not supported the superiority of a TSM dressing versus a gauze dressing; note that a gauze dressing underneath a TSM dressing is considered a gauze dressing and changed at least every 2 days.[3-5,16] (II)

5 - Ancoraggio



Guidelines for the Prevention of Intravascular Catheter-Related Infections, 2011

Catheter Securement Devices

Use a sutureless securement device to reduce the risk of infection for intravascular catheters [105]. Category II

been quantified. Sutures are associated with needle-stick injury, in addition to supporting the growth of biofilm and increasing the risk of catheter-related bloodstream infection.[7-10] (II, Regulatory)

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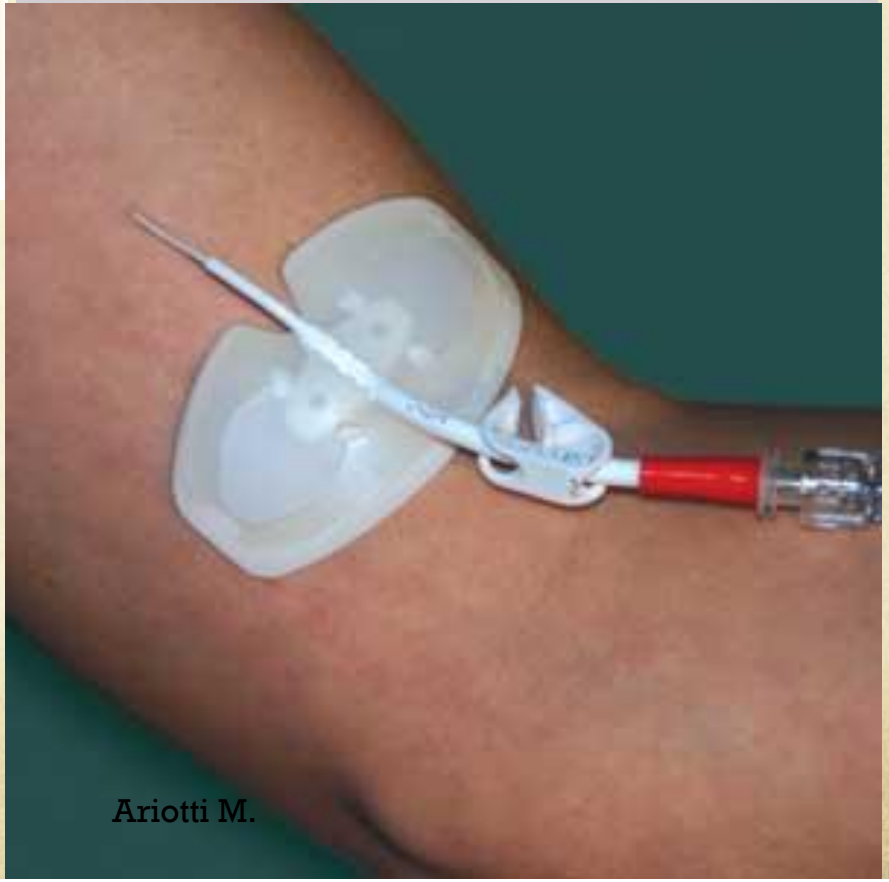

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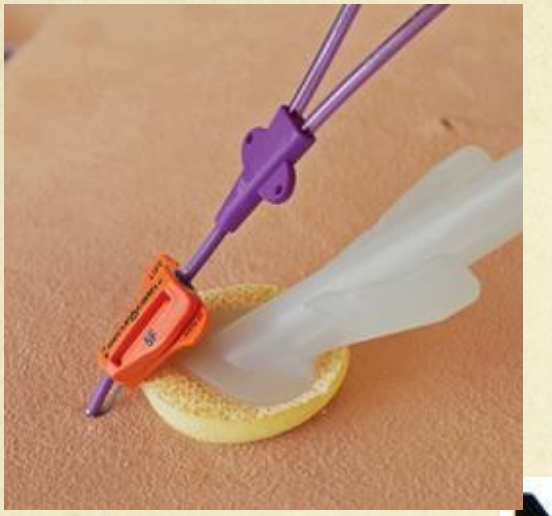
JVA
ISSN 1129-7298
J Vasc Access 2017; 00 (00): 000-000
DOI: 10.5301/jva.5000655
ORIGINAL RESEARCH ARTICLE

Evaluating safety, efficacy, and cost-effectiveness of PICC securement by subcutaneously anchored stabilization device

Pietro Antonio Zerla[1], Antonio Canelli[1], Lidia Cerne[1], Giuseppe Caravella[1], Alessandra Gilardini[1], Giuseppe De Luca[1], Ana Maria Aricisteanu[1], Raffaele Venezia[1]



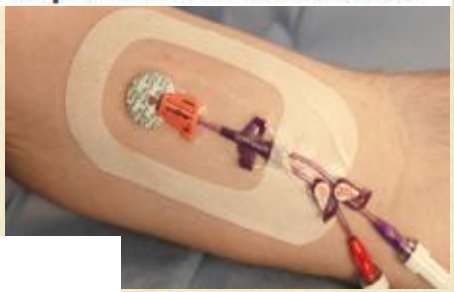
Conclusion

The SAS, in our experience, has demonstrated a viable alternative to traditional devices for securing PICCs.

With regard to safety, the SAS has contributed to reduction of mechanical complications showing a greater ability to prevent the extraluminal dislodgement, with consequent reduction of the number of PICC replacements and a net reduction of the risk of therapy interruption and cost savings.

The SAS, although used in the most difficult conditions, (i.e., oncology patients) and for long dwell times, has demonstrated a clear superiority in stabilizing PICCs.

The introduction of SAS in the PICC procedure gave our institution not only economic but also professional benefits.



NICE National Institute for Health and Care Excellence

1.3 Cost modelling shows that SecurAcath is cost saving compared with adhesive securement devices if the PICC remains in place for 15 days or longer. Estimated cost savings range from £9 to £95 per patient for dwell times of 25 days and 120 days, respectively. Cost savings result from shorter maintenance times and less need for device replacement with SecurAcath. Annual savings across the NHS in England from using SecurAcath are estimated to be a minimum of £4.2 million.

6 - Utilizzo siringhe preriempite

A. Use single-dose systems (eg, single-dose vials or pre-filled labeled syringes) for all VAD flushing and locking.
   1. Commercially available prefilled syringes may reduce the risk of CR-BSI and save staff time for syringe preparation.[1-3] (IV)

Contents lists available at ScienceDirect

European Journal of Oncology Nursing

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

ELSEVIER

Impact of flushing with aseptic non-touch technique using pre-filled flush or manually prepared syringes on central venous catheter occlusion and bloodstream infections in pediatric hemato-oncology patients: A randomized controlled study

Gülçin Özalp Gerçeker[a,*], Seda Ardahan Sevgili[b], Figen Yardımcı[b]

CVC is provided in the literature. Manually prepared and single-use pre-filled flush syringes were compared, and the single-use pre-filled flush syringes were found to be effective in reducing the CLABSI rates.

7 - Scrubb attivo/passivo

F. Perform a vigorous mechanical scrub for manual disinfection of the needleless connector prior to each VAD access and allow it to dry.
   1. Acceptable disinfecting agents include 70% isopropyl alcohol, iodophors (ie, povidone-iodine), or >0.5% chlorhexidine in alcohol solution.[7,16] (II)

G. Use of passive disinfection caps containing disinfecting agents (eg, isopropyl alcohol) has been shown to reduce intraluminal microbial contamination and reduce the rates of central line-associated bloodstream infection (CLABSI). Use of disinfection caps on peripheral catheters has limited evidence but should be considered.

8 - Registrazione su checklist

Checklist for Prevention of Central Line Associated Blood Stream Infections

Based on 2011 CDC guideline for prevention of intravascular catheter-associated bloodstream infections:
https://www.cdc.gov/infectioncontrol/guidelines/bsi/index.html
Strategies to Prevent Central Line–Associated Bloodstream Infections in Acute Care Hospitals: 2014 Update
http://www.jstor.org/stable/10.1086/676533

For Clinicians:

Follow proper insertion practices

- ☐ Perform hand hygiene before insertion.
- ☐ Adhere to aseptic technique.
- ☐ Use maximal sterile barrier precautions (i.e., mask, cap, gown, sterile gloves, and sterile full body drape).
- ☐ Choose the best insertion site to minimize infections and noninfectious complications based on individual patient characteristics.
  - Avoid femoral site in obese adult patients.
- ☐ Prepare the insertion site with >0.5% chlorhexidine with alcohol.
- ☐ Place a sterile gauze dressing or a sterile, transparent, semipermeable dressing over the insertion site.
- ☐ For patients 18 years of age or older, use a chlorhexidine impregnated dressing with an FDA cleared label that specifies a clinical indication for reducing CLABSI for short term non-tunneled catheters unless the facility is demonstrating success at preventing CLABSI with baseline prevention practices.

Handle and maintain central lines appropriately

- ☐ Comply with hand hygiene requirements.
- ☐ Bathe ICU patients over 2 months of age with a chlorhexidine preparation on a daily basis.
- ☐ Scrub the access port or hub with friction immediately prior to each use with an appropriate antiseptic (chlorhexidine, povidone iodine, an iodophor, or 70% alcohol).
- ☐ Use only sterile devices to access catheters.
- ☐ Immediately replace dressings that are wet, soiled, or dislodged.
- ☐ Perform routine dressing changes using aseptic technique with clean or sterile gloves.
  - Change gauze dressings at least every two days or semipermeable dressings at least every seven days.
  - For patients 18 years of age or older, use a chlorhexidine impregnated dressing with an FDA cleared label that specifies a clinical indication for reducing CLABSI for short-term non-tunneled catheters unless the facility is demonstrating success at preventing CLABSI with baseline prevention practices.
- ☐ Change administrations sets for continuous infusions no more frequently than every 4 days, but at least every 7 days.
  - If blood or blood products or fat emulsions are administered change tubing every 24 hours.
  - If propofol is administered, change tubing every 6-12 hours or when the vial is changed.

Promptly remove unnecessary central lines

- ☐ Perform daily audits to assess whether each central line is still needed.

For Healthcare Organizations:

- ☐ Educate healthcare personnel about indications for central lines, proper procedures for insertion and maintenance, and appropriate infection prevention measures.
- ☐ Designate personnel who demonstrate competency for the insertion and maintenance of central lines.
- ☐ Periodically assess knowledge of and adherence to guidelines for all personnel involved in the insertion and maintenance of central lines.
- ☐ Provide a checklist to clinicians to ensure adherence to aseptic insertion practices.
- ☐ Reeducate personnel at regular intervals about central line insertion, handling and maintenance, and whenever related policies, procedures, supplies, or equipment changes.
- ☐ Empower staff to stop non-emergent insertion if proper procedures are not followed.
- ☐ Ensure efficient access to supplies for central line insertion and maintenance (i.e. create a bundle with all needed supplies).
- ☐ Use hospital-specific or collaborative-based performance measures to ensure compliance with recommended practices.

Supplemental strategies for consideration:

- ☐ Antimicrobial/Antiseptic impregnated catheters
- ☐ Antiseptic impregnated caps for access ports

9 - Implementazione Bundle

RESEARCH

doi: 10.1111/nicc.12186

Improving compliance with central venous catheter care bundles using electronic records

Andrew Hermon, Terina Pain, Penelope Beckett, Heather Jerrett, Nicola Llewellyn, Paul Lawrence and Tamas Szakmany

ABSTRACT

Background: Health care associated infections are a major contributor to avoidable harm experienced by patients in modern health care settings. Recent reports suggest that electronic checklists for the documentation of a central line bundle may significantly enhance documented process compliance and help to reduce catheter-related bloodstream infection rates.

Aims: This paper describes the use of our electronic tool to monitor and feedback process compliance in conjunction of introducing bespoke central line insertion packs to tackle catheter-related bloodstream infections in our intensive care unit in a medium-sized district general hospital.

Design and methods: Continuous quality improvement programme with 'Plan-Do-Study-Act' cycles was implemented. The central venous catheter insertion and maintenance bundle was rolled out in 2007. To monitor compliance with the bundle elements, an electronic tool was designed as part of our bedside Clinical Information System. From 2009, regular quarterly feedback was provided on the number of central venous catheter lines inserted, compliance with the insertion and maintenance bundle and catheter-related bloodstream infection rate using the data collected through the Clinical Information System. We have also introduced dedicated line insertion trolleys and factory-prepared insertion packs. We used segmented regression analysis to assess the changes in the catheter-related bloodstream infection rate before and after implementation of the central venous catheter bundle.

Results: Bundle compliance increased during the implementation period and reached over 95% within 6 months. We observed a significant reduction in the catheter-related bloodstream infection rate from 15-6/1000 days to 0-4/1000 days. Regression analysis showed that only the compliance had significant effect on the number and prevalence of catheter-related bloodstream infections.

Conclusion/Implications: Implementation of evidence-based care bundles reinforced by real-time feedback on the performance of caregivers can significantly reduce the rate of catheter-related bloodstream infection in the intensive care unit. Ensuring that change processes are seamlessly integrated in the workflow with minimal administrative burden is crucial to the quality improvement process.

10 - Valutazione quotidiana necessità accesso

44.1 The clinical need for each peripheral and nontunneled central vascular access device (CVAD) is assessed on a daily basis.

10. Promptly remove any intravascular catheter that is no longer essential [69–72].

Category IA

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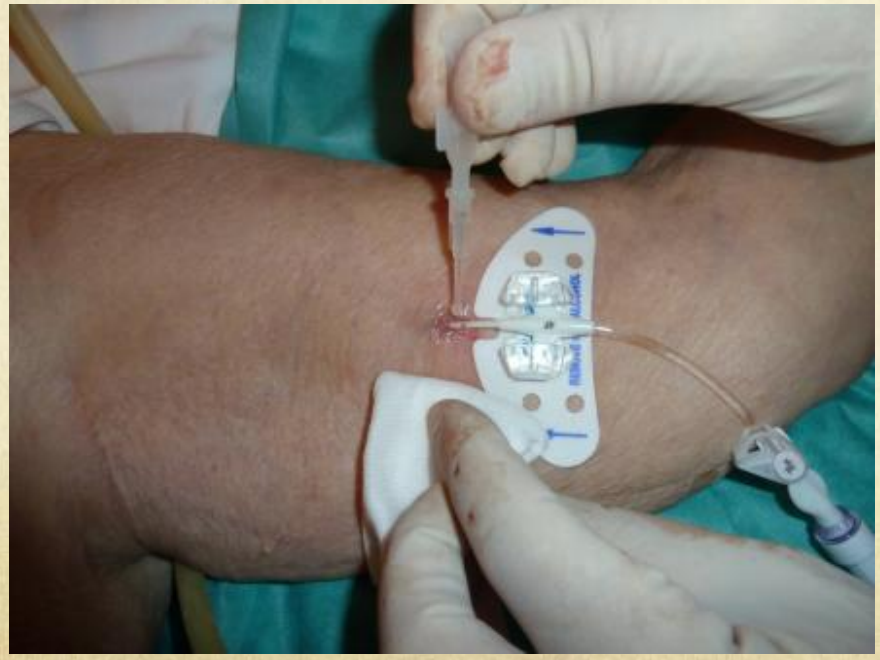
Costo efficacia da dimostrare

(ma ragionevolmente costo-efficaci)

1 - Colla istoacrilica

L. Consider the use of a hemostatic agent to reduce initial site bleeding if other methods (eg, pressure) fail to reduce the need for unplanned dressing changes after peripherally inserted central catheter (PICC) insertion.[28] (V)



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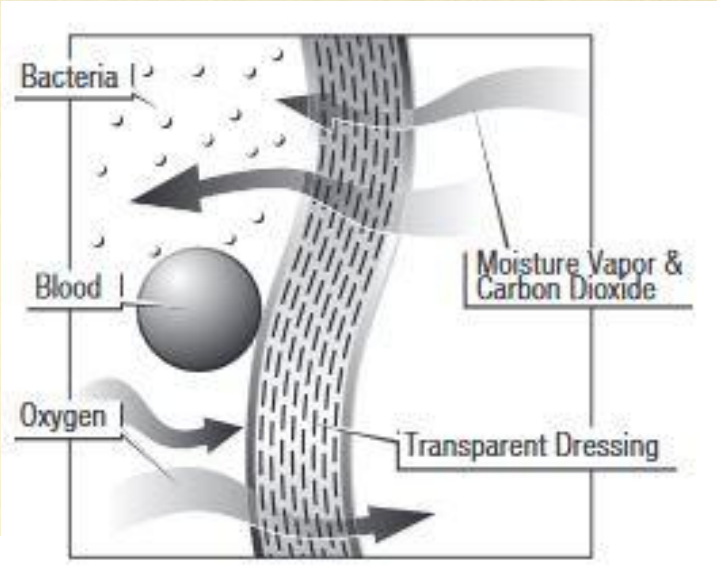
JVA
The Journal of Vascular Access
Volume 17 Number 4 July-August 2016

FIRST PICC/MIDLINE DRESSING AFTER INSERTION: FROM 24 HOURS UP TO 7 DAYS WITH CYANOACRYLATE GLUE

M. Ariotti
ASL Torino 1, Torino, Italy

Discussion and conclusions: The use of cyanoacrylate glue on catheter insertion site during implantation has proved to be a valid method to procrastinate the need of the first dressing after insertion, from the traditional 24 hours up to 7 days; and with considerable economics savings (both in material and in working time) and a reduction in discomfort for patients (particularly when patients are scheduled to return for the first dressing to the medical surgery the next day after implantation).

2 - MVTR



5.5 Moisture vapour transmission rate of dressings

This concept was introduced in the literature review. The MTVR is a measure of the rate of how much water vapour will pass through a given area of material in a specific time and is determined by the difference in partial pressure of water vapour across a membrane (Thomas, Barry, Fram, & Phillips, 2011, p.484). It is calculated by

> MVTR = > traspirabilità

3 - NFC

NFC a pressione neutra probabilmente da preferire ai NFC a pressione positiva/negativa:

- ✓ Minor rischio infettivo
- ✓ Minor rischio occlusioni
- ✓ Minor rischio danneggiamento catetere da ripetuti clampaggi

4 - Carrello dedicato

Riassumendo....

- ✓Igiene delle mani con Gel Idroalcolico
- ✓All-inclusive Kit
- ✓Clorexidina 2% (continua e discontinua)
- ✓Membrane Semipermeabili Trasparenti
- ✓SAS > ESD adesivi
- ✓Siringhe preriempite
- ✓Scrub the hub
- ✓Check-list / Bundle
- ✓Valutazione quotidiana necessità accesso
- ✓Colla istoacrilica
- ✓> MVTR
- ✓ NFC pressione neutra
- ✓Carrello dedicato

- ❑***Riduzione tempo lavoro***
- ❑***Riduzione rischio Clabsi***
- ❑***Riduzione rischio dislocazione***

Chi è un cinico? Un uomo che conosce il prezzo di ogni cosa e il valore di nessuna.

Oscar Wilde

Rischio di MARSI

Definition of Medical Adhesives (abbreviated from US FDA's Definition):

"A medical adhesive is a product used to approximate wound edges or to affix an external device (i.e., tape, dressing, catheter, electrode, pouch, or patch) to the skin."

Definition of a Medical Adhesive-Related Skin Injury (MARSI):

"è una situazione in cui l'eritema o altre manifestazioni di anormalità cutanea persistono 30 minuti o più dopo la rimozione dell'adesivo. Possono evidenziarsi uno o più dei seguenti segni:

Skin stripping

Tension injury or blister

Skin tear

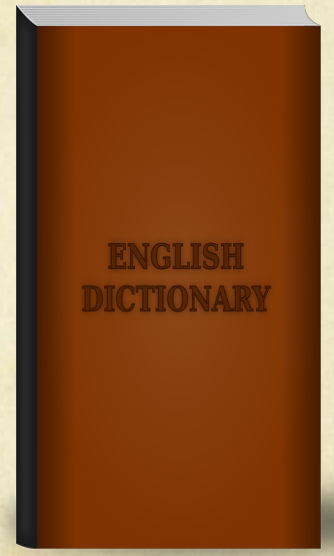
Irritant contact dermatitis

Allergic dermatitis

Maceration

Folliculitis

(McNichol et al, 2013).



J. Be aware of the risk of medical adhesive-related skin injury (MARSI) associated with the use of adhesive-based ESDs.
   1. Assess skin when the device is changed; anticipate potential risk for skin injury due to age, joint movement, and presence of edema.
   2. Apply barrier solutions to skin exposed to the adhesive dressing to reduce the risk of MARSI. Compound tincture of benzoin should not be used due to increased risk of MARSI because it may increase the bonding of adhesives to skin, causing skin injury when the adhesive-based ESD is removed.[8] (I)

INS 2016: *prima società scientifica a fornire raccomandazioni atte a ridurre il rischio di MARSI nel campo degli accessi vascolari*

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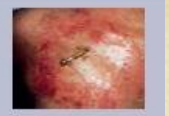
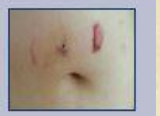
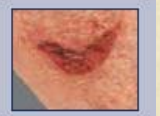
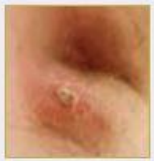
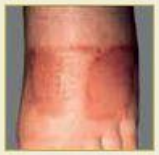
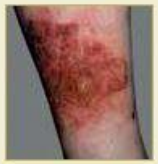
MARSI

- **Mechanical**
  - Skin tears
  - Epidermal stripping
  - Tension injuries
- **Maceration**
- **Folliculitis**
- **Contact Dermatitis**
- **Allergic Dermatitis**

Mechanical		
Skin (epidermal) stripping	Removal of one or more layers of the stratum corneum following removal of adhesive tape or dressing	
Tension injury or blister	Injury caused by shear force as a result of distension of skin under an unyielding adhesive tape or dressing	
Skin tear	Wound caused by shear, friction and/or blunt force resulting in separation of skin layers; can be partial- or full-thickness	
Other		
Maceration	Changes in the skin resulting from moisture being trapped against the skin for a prolonged period; skin appears wrinkled and white/grey in colour	
Folliculitis	Inflammatory reaction in hair follicle caused by shaving or entrapment of bacteria; appears as small inflamed elevations of skin surrounding the hair follicle	
Dermatitis		
Irritant contact dermatitis	Non-allergic contact dermatitis occurring as a result of a chemical irritant; a well-defined affected area correlates with the area of exposure	
Allergic dermatitis	Cell-mediated immunologic response to a component of tape adhesive or backing; typically appears as an area of erythematous vesicular, pruritic dermatitis corresponding to the area of exposure and/or beyond	

Fattori di rischio

Table 1. Intrinsic and extrinsic factors in skin integrity

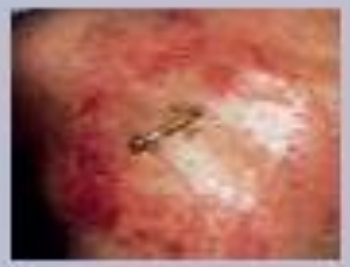
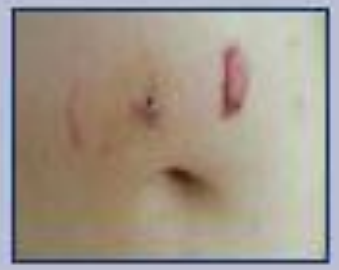
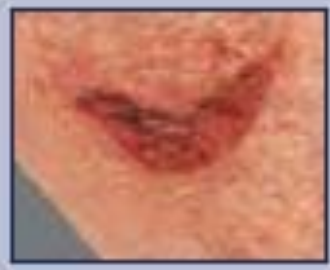
Intrinsic factors	Extrinsic factors
■ Extremes of age (neonates/premature infants and the elderly) ■ Race/ethnicity ■ Dermatological conditions (eczema, dermatitis, chronic exudative ulcers, epidermolysis bullosa) ■ Underlying medical conditions (diabetes, infection, renal insufficiency, immunosuppression, venous insufficiency, venous hypertension) ■ Malnutrition and dehydration	■ Drying of the skin due to harsh skin cleansers, excessive bathing, low humidity ■ Prolonged exposure to moisture ■ Certain medications (anti-inflammatory agents, anticoagulants, chemotherapeutic agents, long-term corticosteroid use) ■ Radiation therapy ■ Photo damage (ultraviolet light) ■ Tape/dressing/device removal ■ Repeated taping

Source: McNichol et al, 2013

- **Qualità adesivi**

Hitchcock J, Savine L. Medical adhesive-related skin injuries associated with vascular access British Journal of Nursing, 2017, (IV Therapy Supplement) Vol 26, No 8.

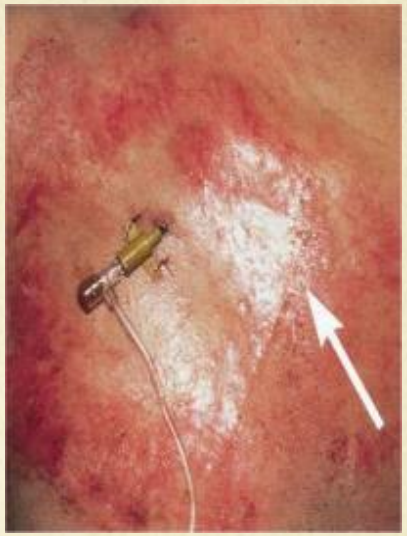
Mechanical

Skin (epidermal) stripping	Removal of one or more layers of the stratum corneum following removal of adhesive tape or dressing	
Tension injury or blister	Injury caused by shear force as a result of distension of skin under an unyielding adhesive tape or dressing	
Skin tear	Wound caused by shear, friction and/or blunt force resulting in separation of skin layers; can be partial- or full-thickness	

Mechanical Injury: Epidermal Stripping
(*Rimozione Epidermide*)

Ripetute applicazioni e rimozioni dell'adesivo provocano il distacco di strati di cellule superficiali (strato corneo), modificano la funzione barriera della cute e attivano la risposta infiammatoria.

Le lesioni sono spesso superficiali e di forma irregolare e la pelle può apparire lucida; le lesioni aperte possono essere accompagnate da eritema e formazione di vesciche.



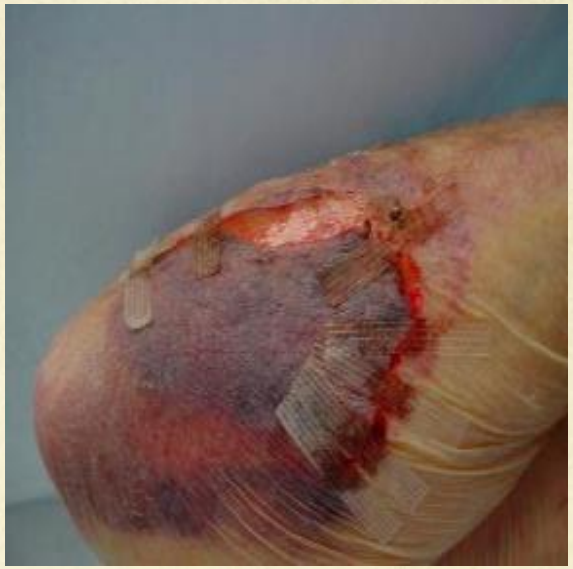
Brett DW. Impact on pain control, epidermal stripping, leakage of wound fluid, ease of use, pressure reduction, and cost-effectiveness. *J Wound Ostomy Continence Nurs*. 2006;33(Suppl 6): S15-S19.

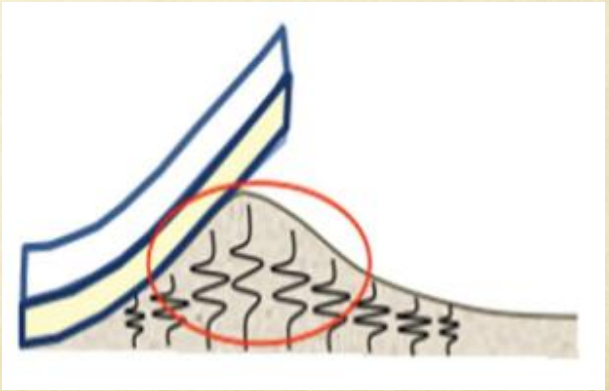
Lund CH, Nonato LB, Kuller JM, Franck LS, Cullander C, Durand DJ. Disruption of barrier function in neonatal skin with adhesive removal. *J Pediatr.* 1997;131(3):367-372.

Mechanical Injury: Skin Tears
(*Lacerazioni cutanee*)

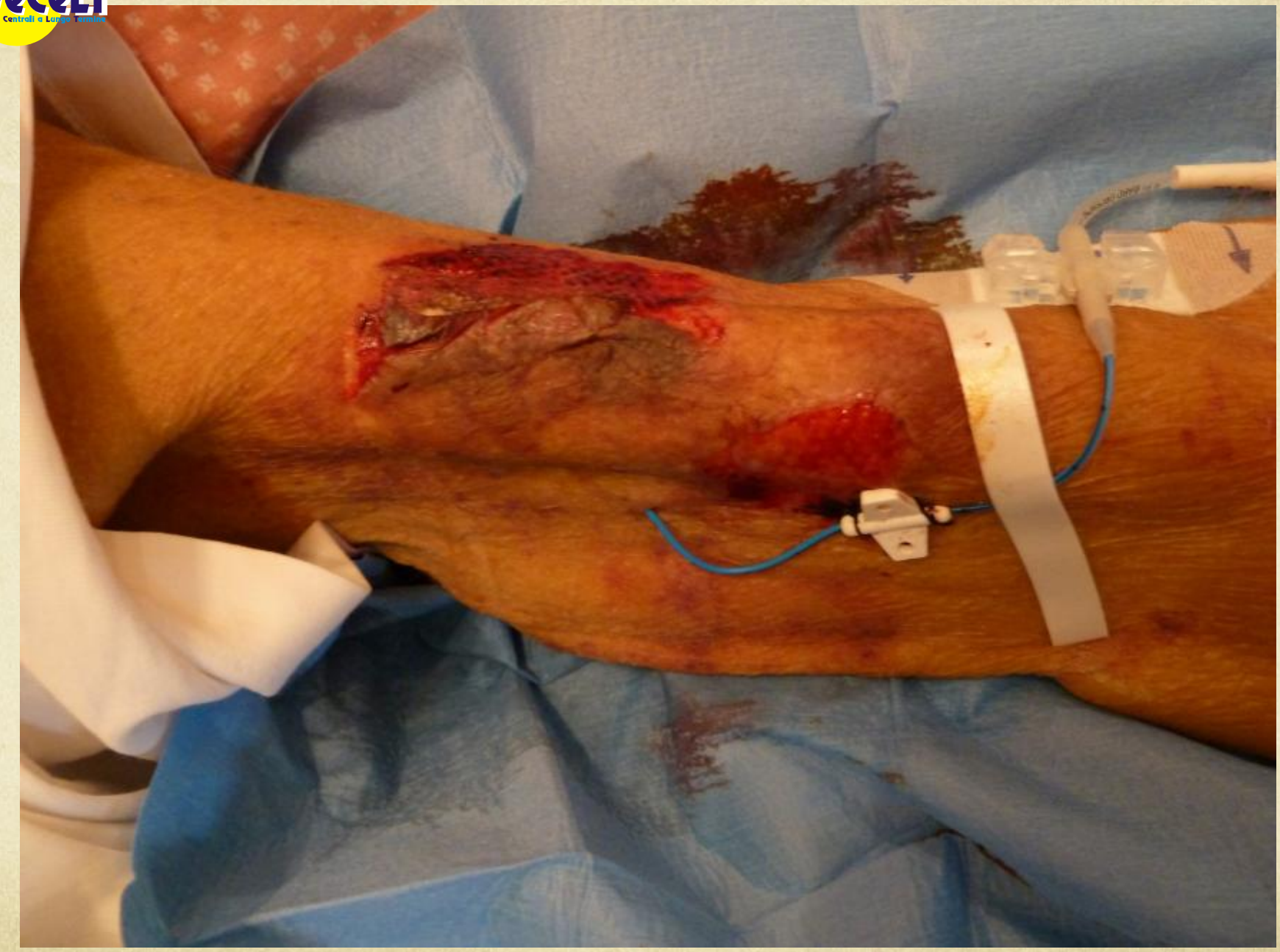
Ferita causate da taglio, attrito e/o forza smussata con conseguente separazione (parziale o piena) degli strati cutanei.

Si verifica quando l'interazione pelle-adesivo è più forte dell'interazione tra le cellule epiteliali. Gli strati epidermici si separano o l'epidermide si separa completamente dal derma.

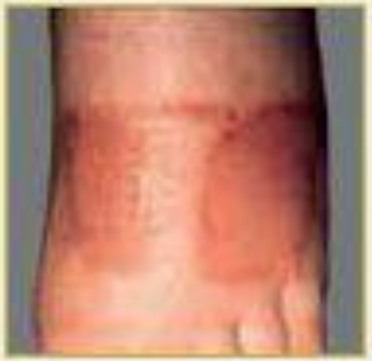
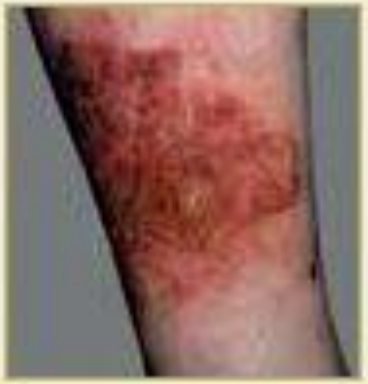




LeBlanc K , Baranoski S . Skin tears: state of the science: consensus statements for the prevention, prediction, assessment, and treatment of skin tears. *Adv Skin Wound Care.* 2011 ; 24 (9)(suppl 1): 2-15 .



Dermatitis

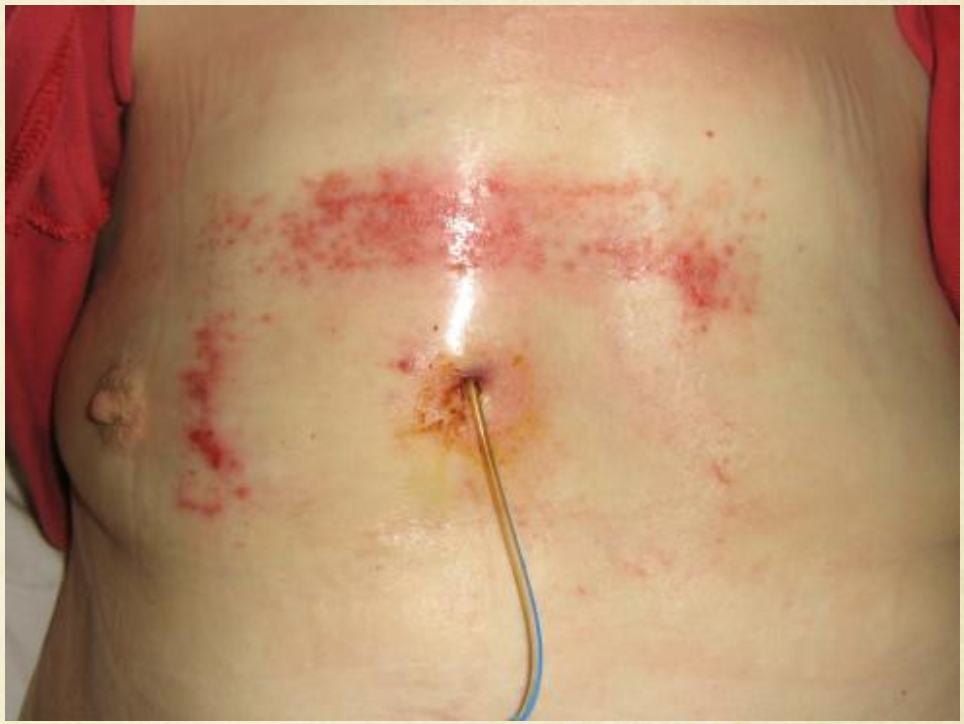
Irritant contact dermatitis	Non-allergic contact dermatitis occurring as a result of a chemical irritant; a well-defined affected area correlates with the area of exposure	
Allergic dermatitis	Cell-mediated immunologic response to a component of tape adhesive or backing; typically appears as an area of erythematous vesicular, pruritic dermatitis corresponding to the area of exposure and/or beyond	

Dermatite non Allergica o Irritativa da Contatto

I prodotti adesivi medicali sono una causa comune di dermatite non allergica da contatto.

È più probabile che tali reazioni si verifichino con esposizione prolungata e riflettano la forma dell'irritante.

Si nota un aumento dell'incidenza quando gli antisettici cutanei non si lasciano asciugare correttamente prima dell'applicazione dell'adesivo.

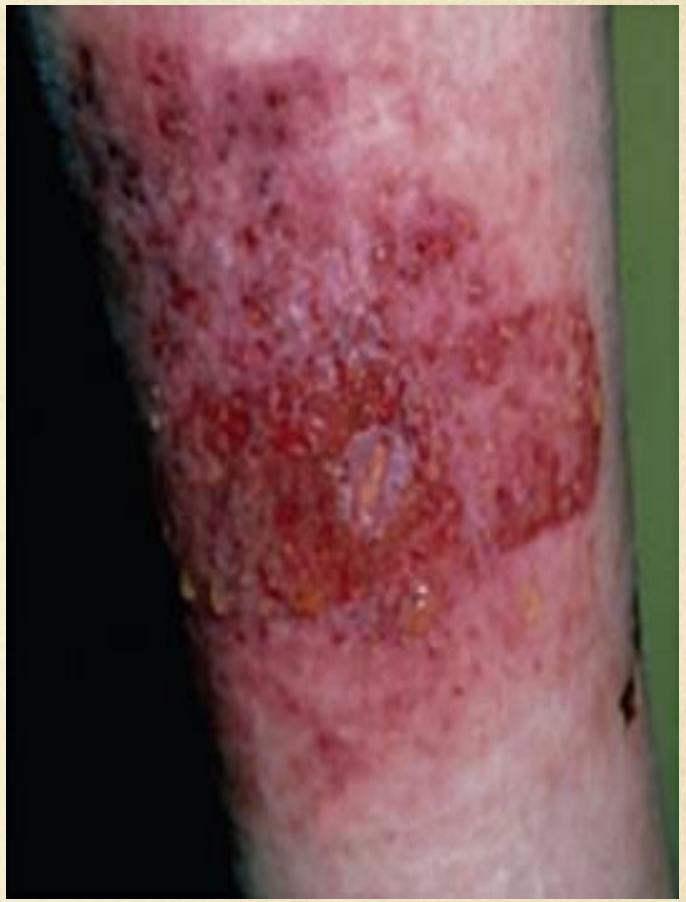


Dermatitis from medical devices, implants, and equipment. In: Reitschel RL, Fowler JF Jr, eds. *Fisher's contact dermatitis*. Philadelphia, PA: Lippincott Williams & Wilkins; 2001:336-41.

Dermatite Allergica

Risposta immunologica cellulo-mediata a un componente dell'adesivo con reazione che si estende oltre l'area di esposizione.

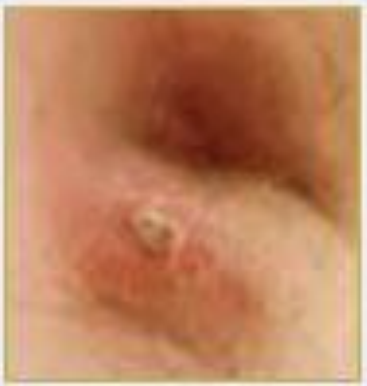
L'incidenza della vera dermatite allergica non è nota; si dovrebbe prendere in considerazione, in caso di dermatite allergica sospetta, un'indagine appropriata (come patch o scratch test).



Usatine RP, Riojas M. Diagnosis and management of contact dermatitis. *Am Fam Physician.* 2010;82(3):249-255.

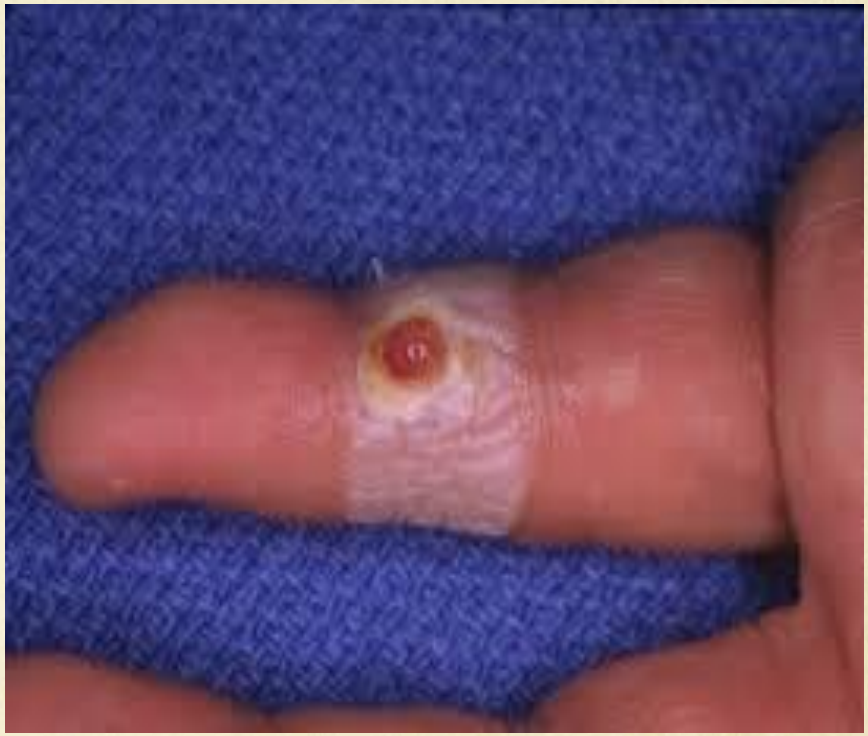
Widman TJ, Oostman H, Storrs FJ. Allergic contact dermatitis from medical adhesive bandages in patients who report having a reaction to medical bandages. *Dermatitis.* 2007;19(1):32-37.

Other

Maceration	Changes in the skin resulting from moisture being trapped against the skin for a prolonged period; skin appears wrinkled and white/grey in colour	
Folliculitis	Inflammatory reaction in hair follicle caused by shaving or entrapment of bacteria; appears as small inflamed elevations of skin surrounding the hair follicle	

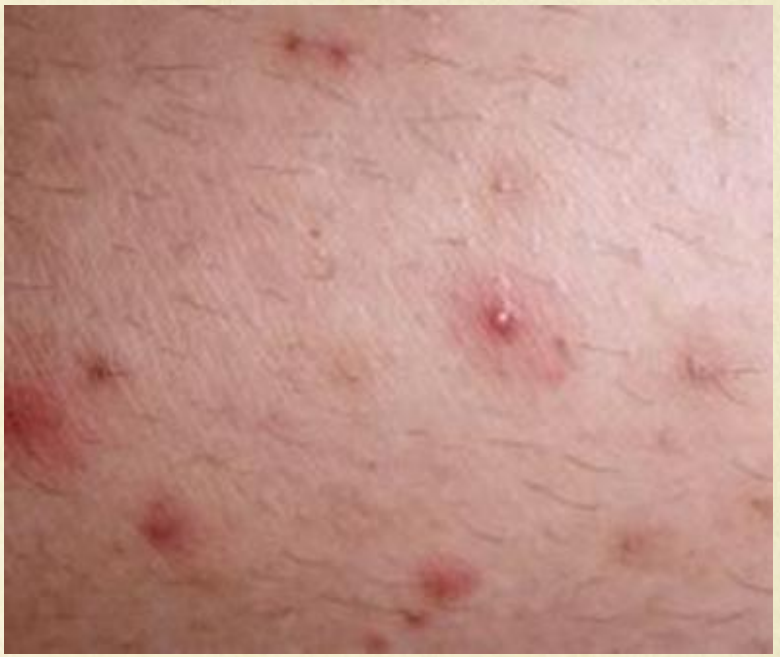
Macerazione

Modificazioni cutanee dovute all'umidità intrappolata tra cerotto e pelle per un periodo prolungato; la pelle appare rugosa e di colore bianco/grigio; l'ammorbidimento della pelle provoca un aumento della permeabilità e della suscettibilità al danno da attrito e irritanti.



Follicoliti

Reazione infiammatoria nel follicolo pilifero causata dall'utilizzo di rasoi a lama per la tricotomia dell'exit-site e/o intrappolamento di batteri da adesivi occludenti; compaiono piccole elevazioni infiammate della pelle che circondano il follicolo pilifero di tipo non suppurativo (papule) o contenenti pus (pustole).

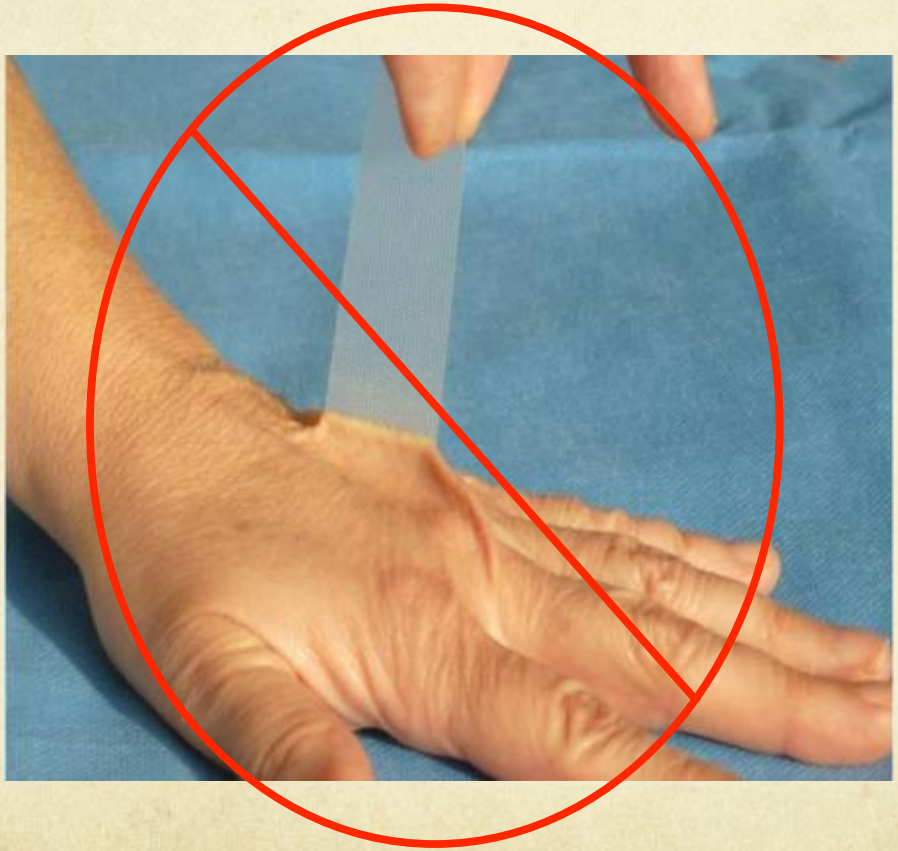


Bryant RA. Saving the skin from tape injuries. *Am J Nurs.* 1988;88(2):189-191.

Richards GM, Oresalo CO, Halder RM. Structure and function of ethnic skin and hair, *Dermatol Clin. 2003*;21(4):595-600.

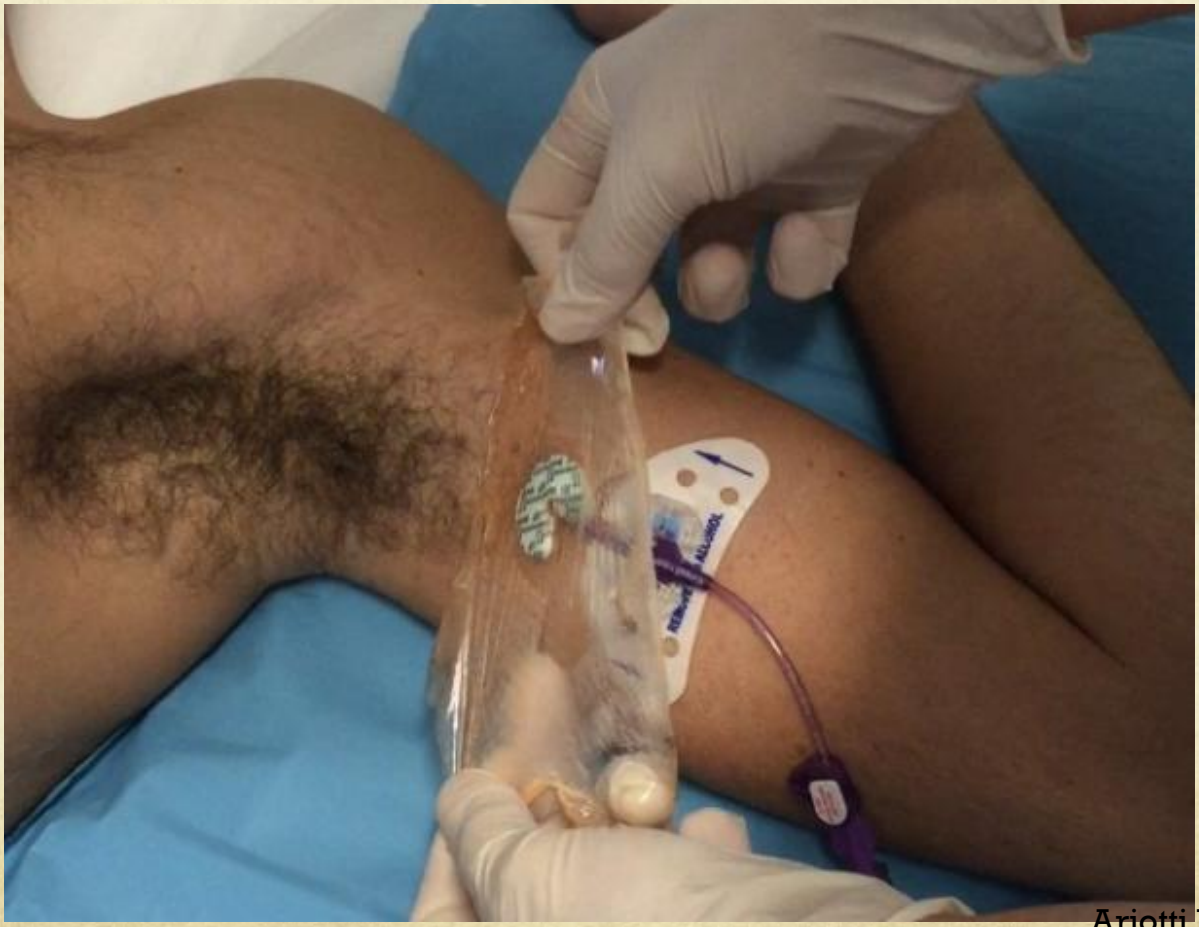
Prevenzione MARSI

✓ Rimozione corretta medicazione



Prevenzione MARSI

✓ Rimozione corretta medicazione (stretching,



Prevenzione MARSI

✓ Rimozione corretta medicazione (stretching, prodotti remove)

Prevenzione MARSI

- ✓ Rimozione corretta medicazione (stretching, prodotti remove)
- ✓ Rispettare i tempi di asciugatura antisettico

Prevenzione MARSI

- ✓ Rimozione corretta medicazione (stretching, prodotti remove)
- ✓ Rispettare i tempi di asciugatura antisettico
- ✓ Considerare l'utilizzo di protettivi cutanei alcol-free

Prevenzione MARSI

- ✓ Rimozione corretta medicazione (stretching, prodotti remove)
- ✓ Rispettare i tempi di asciugatura antisettico
- ✓ Considerare l'utilizzo di protettivi cutanei alcol-free
- ✓ Applicare correttamente la medicazione (NO tensione, NO stretching, NO rasoi) – NON riposizionare il dispositivo di fissaggio sull'area danneggiata

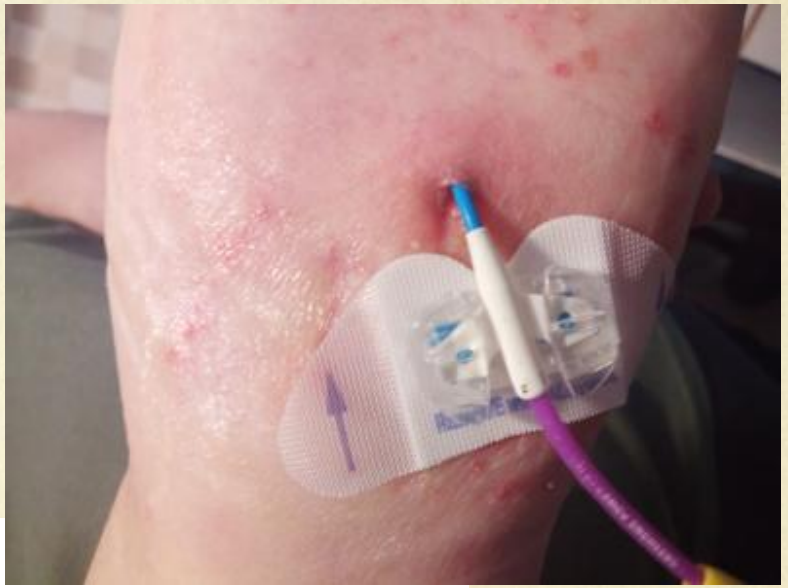
Prevenzione MARSI

- ✓ Rimozione corretta medicazione (stretching, prodotti remove)
- ✓ Rispettare i tempi di asciugatura antisettico
- ✓ Considerare l'utilizzo di protettivi cutanei alcol-free
- ✓ Applicare correttamente la medicazione (NO tensione, NO stretching, NO rasoi) – NON riposizionare il dispositivo di fissaggio sull'area danneggiata
- ✓ Segnalare malnutrizione e disidratazione

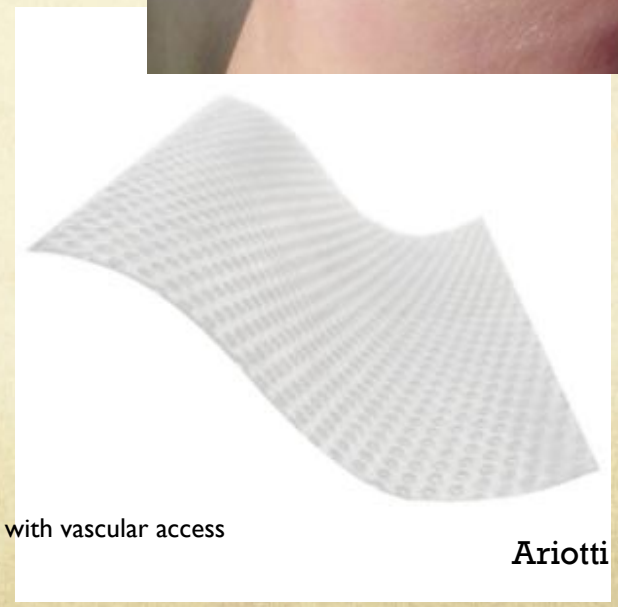
Prevenzione MARSI

- ✓ Rimozione corretta medicazione (stretching, prodotti remove)
- ✓ Rispettare i tempi di asciugatura antisettico
- ✓ Considerare l'utilizzo di protettivi cutanei alcol-free
- ✓ Applicare correttamente la medicazione (NO tensione, NO stretching, NO rasoi) – NON riposizionare il dispositivo di fissaggio sull'area danneggiata
- ✓ Segnalare malnutrizione e disidratazione
- ✓ Valutare quotidianamente l'exit site e necessità AV e documentare

Trattamento MARSI di origine MECCANICA (Epidermal Stripping/Blister)



- ✓ Antisepsi con sol. Acquosa
- ✓ Utilizzare film spray protettivi – NON riposizionare il dispositivo di fissaggio sull'area danneggiata
- ✓ Valutare utilizzo MST in silicone "Based MESH" / >MVTR



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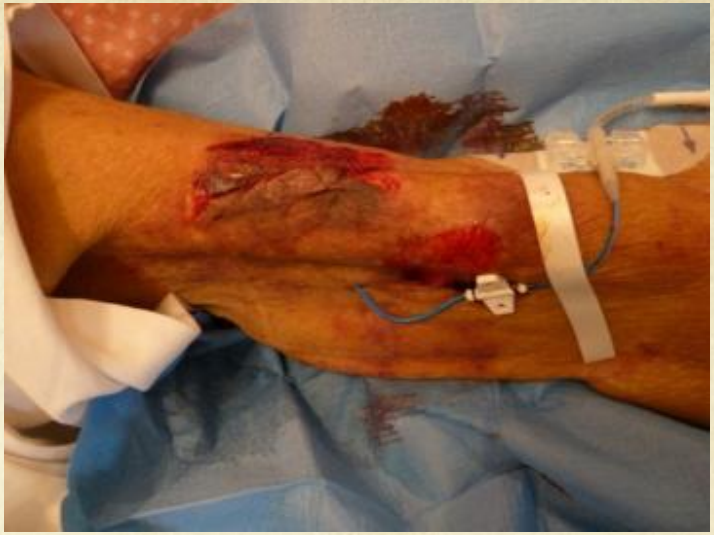
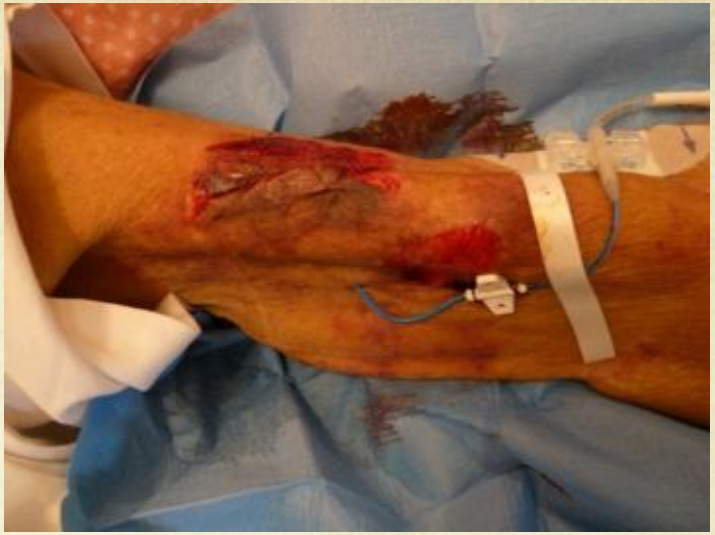
Trattamento MARSI di origine MECCANICA (Skin Tears)



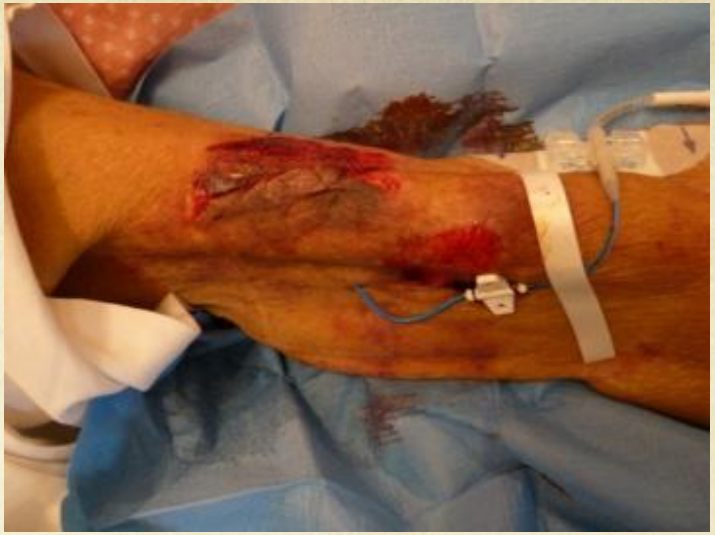
✓ Detersione con sol. Fisiologica

Trattamento MARSI di origine MECCANICA (Skin Tears)



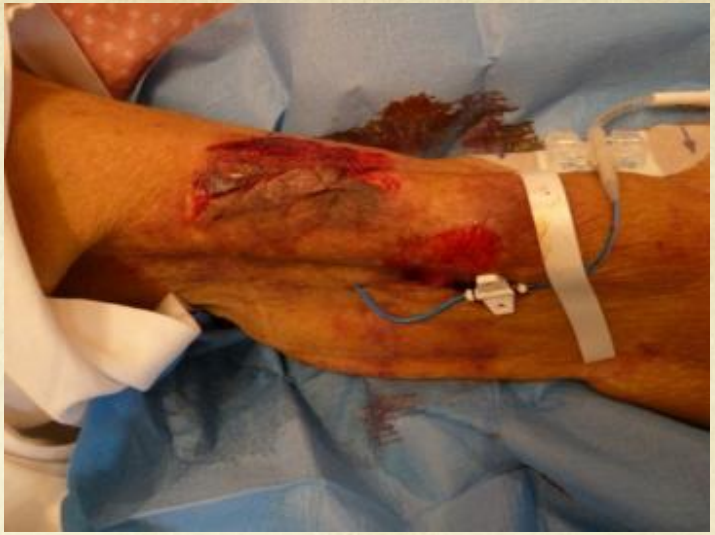
- ✓ Detersione con sol. Fisiologica
- ✓ Ripristino eventuale Flap

Trattamento MARSI di origine MECCANICA (Skin Tears)



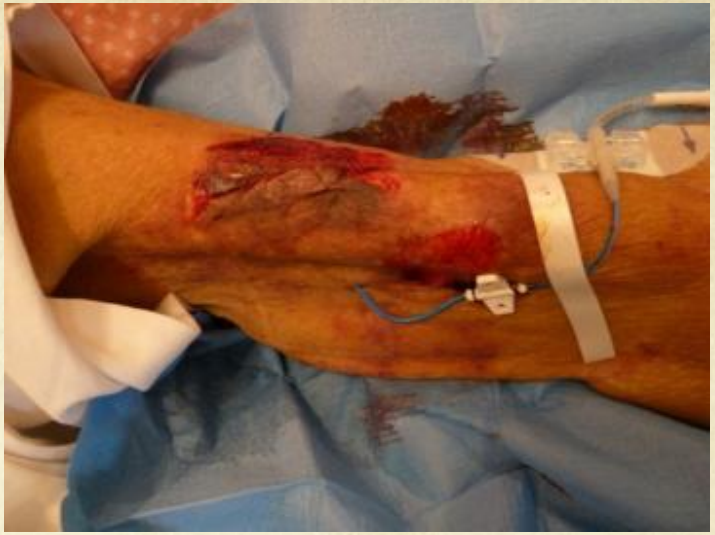
- ✓ Detersione con sol. Fisiologica
- ✓ Ripristino eventuale Flap
- ✓ Copertura area danneggiata con medicazioni in silicone “Based MESH” o garza vaselinata a bassa aderenza

Trattamento MARSI di origine MECCANICA (Skin Tears)



- ✓ Detersione con sol. Fisiologica
- ✓ Ripristino eventuale Flap
- ✓ Copertura area danneggiata con medicazioni in silicone “Based MESH” o garza vaselinata a bassa aderenza
- ✓ NO steril strip

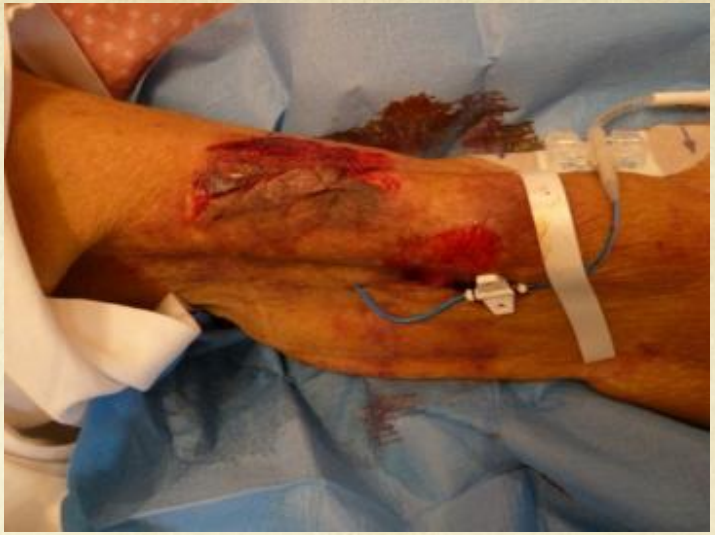
Trattamento MARSI di origine MECCANICA (Skin Tears)



- ✓ Detersione con sol. Fisiologica
- ✓ Ripristino eventuale Flap
- ✓ Copertura area danneggiata con medicazioni in silicone "Based MESH" o garza vaselinata a bassa aderenza

- ✓ NO steril strip
- ✓ Medicazione secondaria (MST) che copra la pelle sana

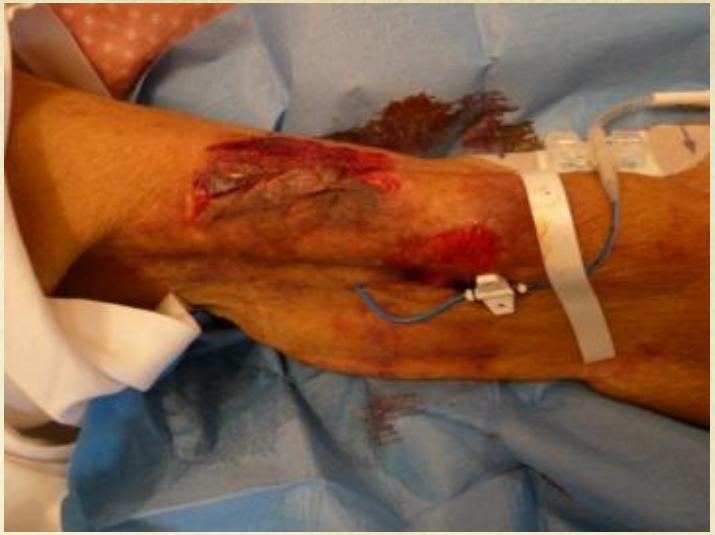
Trattamento MARSI di origine MECCANICA (Skin Tears)



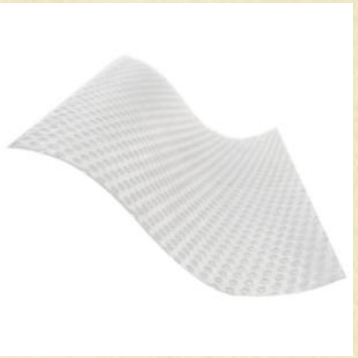
- ✓ Detersione con sol. Fisiologica
- ✓ Ripristino eventuale Flap
- ✓ Copertura area danneggiata con medicazioni in silicone "Based MESH" o garza vaselinata a bassa aderenza

- ✓ NO steril strip
- ✓ Medicazione secondaria (MST) che copra la pelle sana
- ✓ Monitorare, documentare

Trattamento MARSI di origine MECCANICA (Skin Tears)



- ✓ Detersione con sol. Fisiologica
- ✓ Ripristino eventuale Flap
- ✓ Copertura area danneggiata con medicazioni in silicone "Based MESH" o garza vaselinata a bassa aderenza



- ✓ NO steril strip
- ✓ Medicazione secondaria (MST) che copra la pelle sana
- ✓ Monitorare, documentare
- ✓ Rinnovare dopo 5 – 7 gg

Ariotti M. 04/12/18

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Trattamento MARSI di origine

IRRITATIVA

✓Valutare antisepsi con Antisettico sol. acquosa / sol. Fisiologica

✓Utilizzare film spray protettivi

✓Valutare utilizzo MST differente

ALLERGICA

✓Valutare antisepsi con Antisettico sol. acquosa / sol. Fisiologica

✓Utilizzare film spray protettivi

✓Valutare utilizzo MST differente / garze

✓Consulenza dermatologica

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Trattamento MARSI da MACERAZIONE

✓ Utilizzare film spray protettivi

Hitchcock J, Savine L. Medical adhesive-related skin injuries associated with vascular access
British Journal of Nursing, 2017, (IV Therapy Supplement) Vol 26, No 8

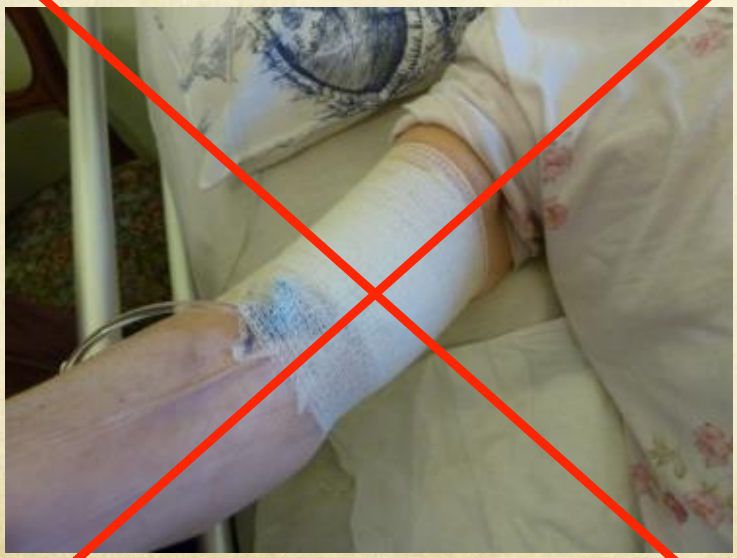
Trattamento MARSI da MACERAZIONE

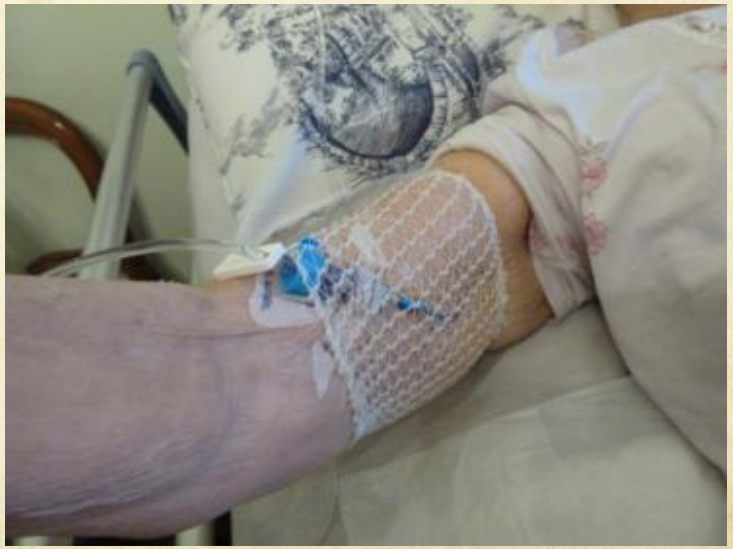
- ✓ Utilizzare film spray protettivi
- ✓ Valutare utilizzo MST differente (> MVTR)

Hitchcock J, Savine L. Medical adhesive-related skin injuries associated with vascular access British Journal of Nursing, 2017, (IV Therapy Supplement) Vol 26, No 8

Trattamento MARSI da MACERAZIONE

- ✓ Utilizzare film spray protettivi
- ✓ Valutare utilizzo MST differente (> MVTR)
- ✓ Se possibile, NO bendaggio non traspirante (<MVTR)





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XII PICC Day

...GRAZIE PER

L'ATTENZIONE...

...e arrivederci al prossimo PICC Day...

GAVeCeLT
Gli Accessi Venosi Centrali a Lungo Termine

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