

# CONGRESSO NAZIONALE SOCIETÀ ITALIANA FISSAZIONE ESTERNA

Fissazione esterna nel trattamento  
delle emergenze e traumi militari,  
tecniche di ricostruzione degli arti e  
trattamento degli esiti postraumatici

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# Management of Pin and Wire Site Infections in External Fixation

Prof Maurizio A. Catagni

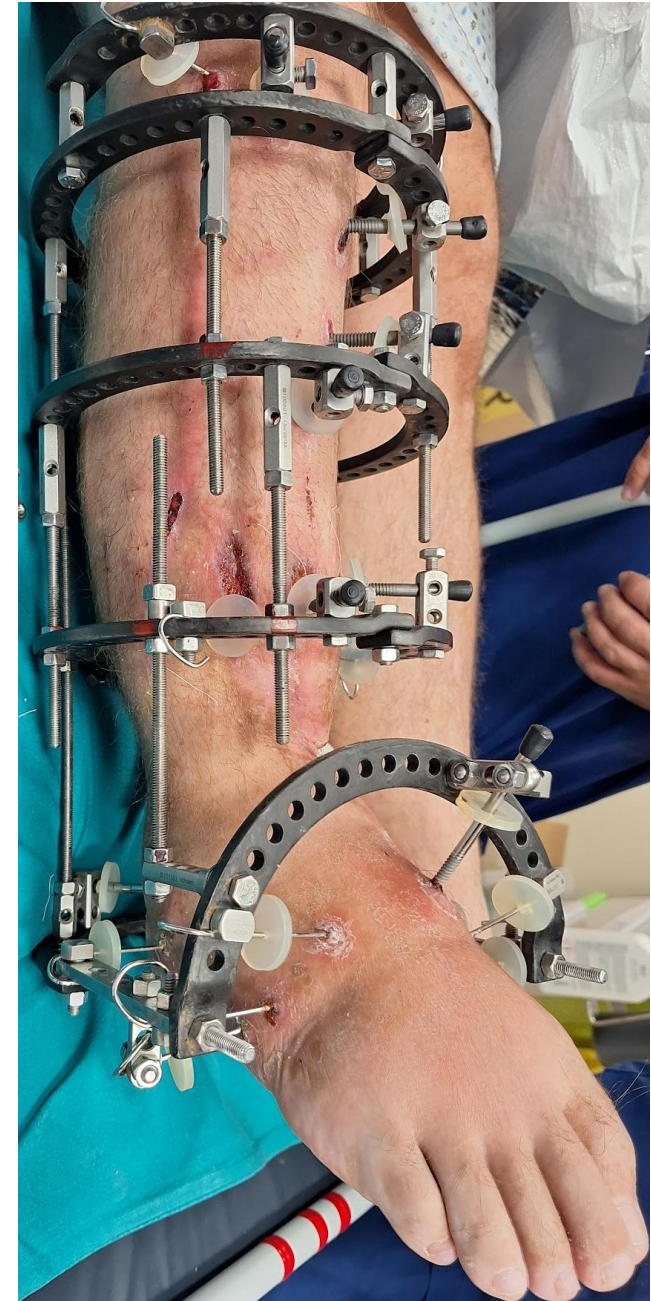
Dott Daniele Pili

Dott.ssa Maria Luiza K. Philippi



# Introduction

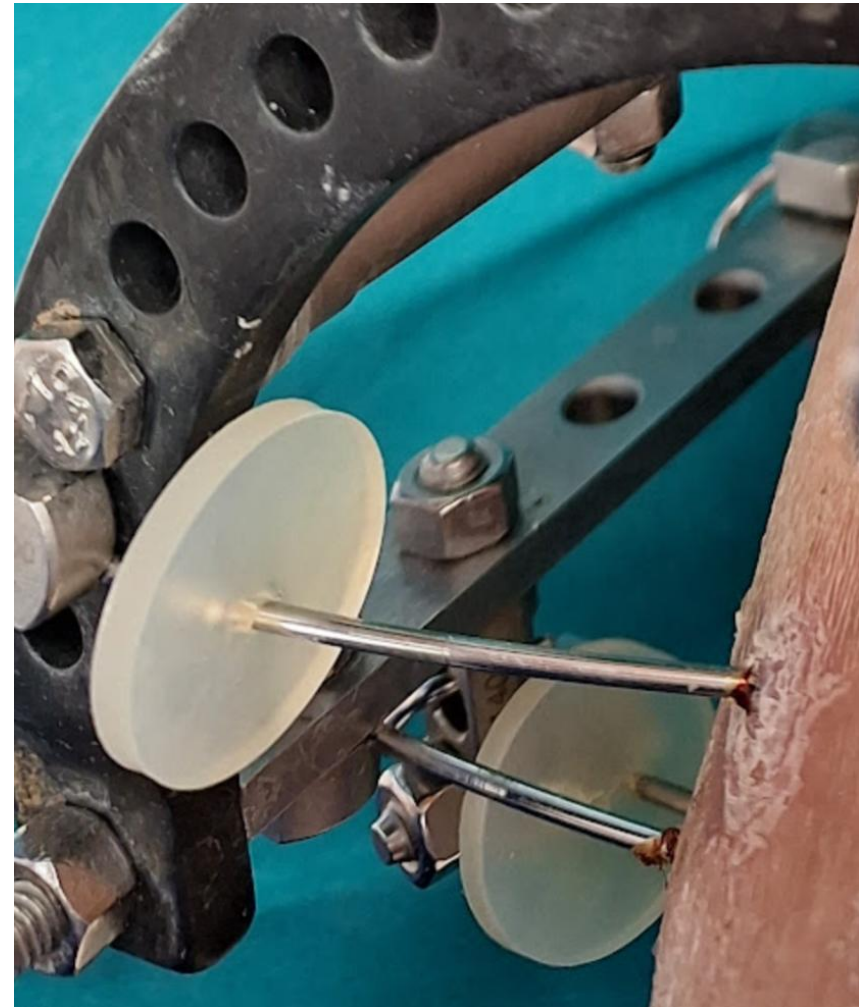
- External fixation is a common method for treating complex fractures and deformities.
- Pin and wire site infections are frequent complications, with reported rates varying widely.
- Effective management is crucial to prevent progression to deeper infections or osteomyelitis.





# Pathophysiology of Pin Site Infections

- Pins and wires breach the skin, creating a potential portal for bacteria.
- Biofilm formation on hardware surfaces complicates eradication.
- Inflammatory response can lead to local tissue damage and systemic infection.



# Risk Factors



**PATIENT-RELATED:** DIABETES,  
SMOKING, POOR NUTRITIONAL  
STATUS, IMMUNOSUPPRESSION.



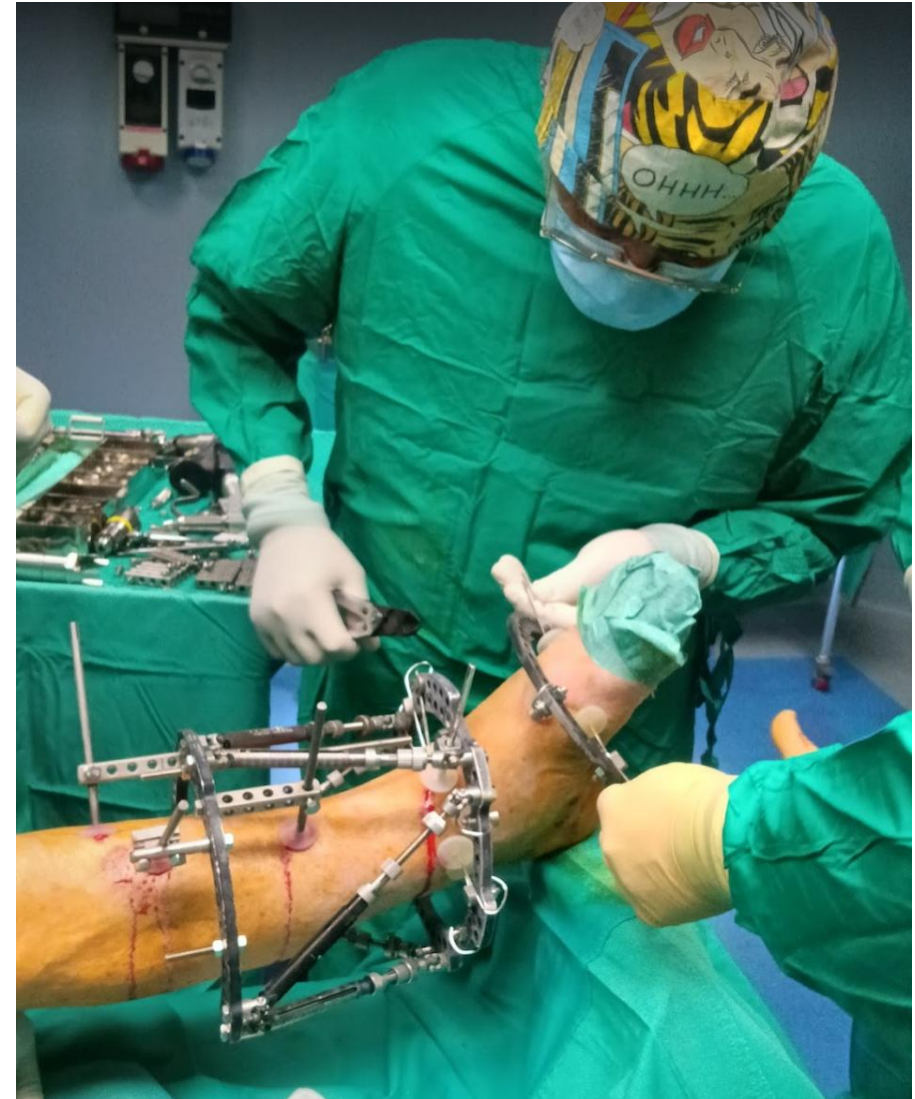
**SURGICAL TECHNIQUE:** THERMAL  
INJURY DURING DRILLING, SOFT  
TISSUE HANDLING.



**POST-OPERATIVE CARE:**  
INADEQUATE PIN SITE HYGIENE,  
DELAYED INFECTION RECOGNITION.

# Prevention Strategies

- **Surgical:**
  - Use of low-thermal techniques during pin insertion.
  - Avoidance of soft tissue entrapment.



# Prevention Strategies

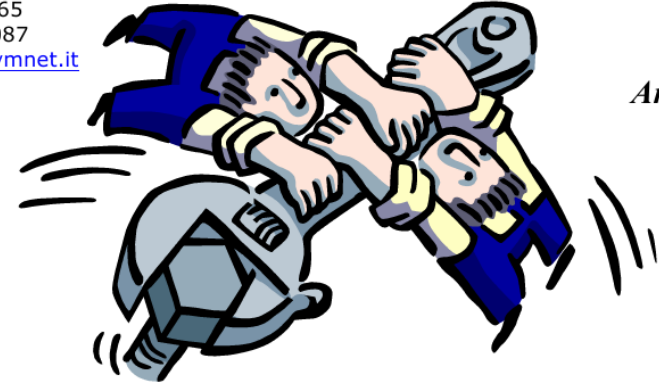
- **Post-operative care:**
  - Regular cleaning with antiseptic solutions (e.g., chlorhexidine).
  - Use of appropriate dressings to minimize moisture and contamination.
  - Patient education on signs of infection and hygiene practices.

G.B. Mangioni Hospital  
Lecco



Regione  
Lombardia

Via Leonardo da Vinci, 49 - 23900 Lecco  
tel: +39 0341 478565  
fax: +39 0341 285087  
web: <http://www.gvmnet.it>



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## *MANUALE SULLA MANUTENZIONE DEL FISSATORE ESTERNO*





# How to Perform a Wound Dressing

- Preparation Phase
- Cleansing Phase
- Disinfection Phase
- Reordering/Clean-Up Phase

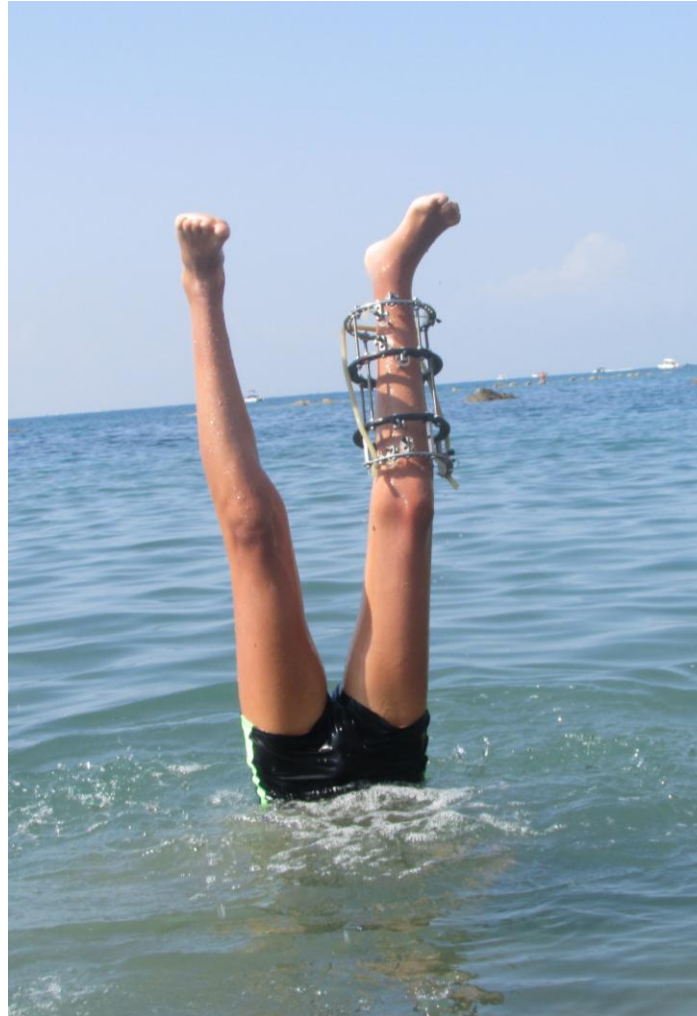




# Management of Established Infections

- **Mild infections:**

- Local care with antiseptics.
- Oral antibiotics targeting common skin flora.



- **Severe infections:**

- Intravenous antibiotics.
- Possible pin or wire removal.
- Surgical debridement if necessary

# Emerging Strategies

- Use of hydroxyapatite-coated pins to enhance osseointegration and reduce infection rates.
- Development of antimicrobial-impregnated dressings.
- Research into optimal cleaning regimens and frequency.



# Conclusions

- Pin and wire site infections remain a significant challenge in external fixation.
- Adherence to meticulous surgical technique and post-operative care protocols is essential.
- Ongoing research and innovation are vital to improve patient outcomes







**GRAZIE!**