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Management of Pyogenic Flexor Tenosynovitis

A 10-Year Retrospective Study of 300 patients

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Disclosure of conflicts of interest

Nothing to declare

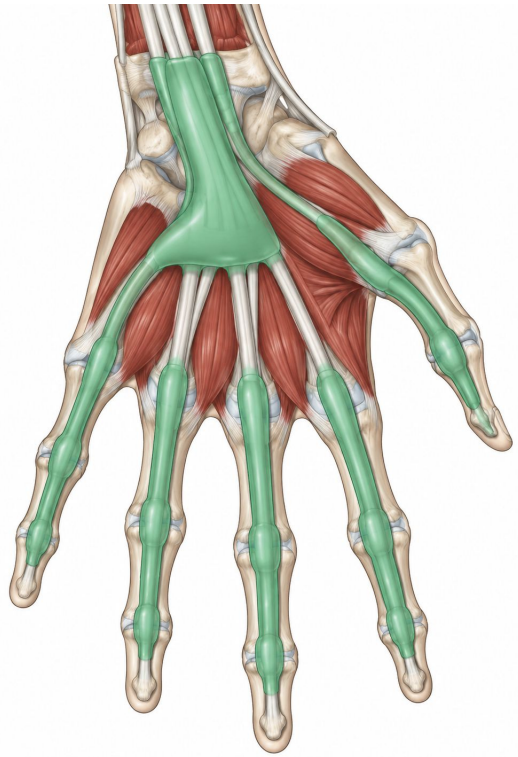
Introduction

Acute infection of the digital flexor tendon sheath

Main mechanism: direct inoculation by penetrating trauma

Surgical emergency
- Rapid progression within closed compartment
- Risk of tendon necrosis and amputation

Early diagnosis and prompt surgical management
are critical to preserve hand function





Chapman et al. 2019 J Hand Surg Am
Mehta et al. 2024 Am J Emerg Med

Little evidence-based guidance

Methods

Study setting

Retrospective cohort – 10 years (2014-24)
Single tertiary care center
- Reference center for complex BJI
- Specialized Hand Emergency Center



Included population

Adults (≥ 18 yo)
Surgically managed PFT
Adjacent infections excluded

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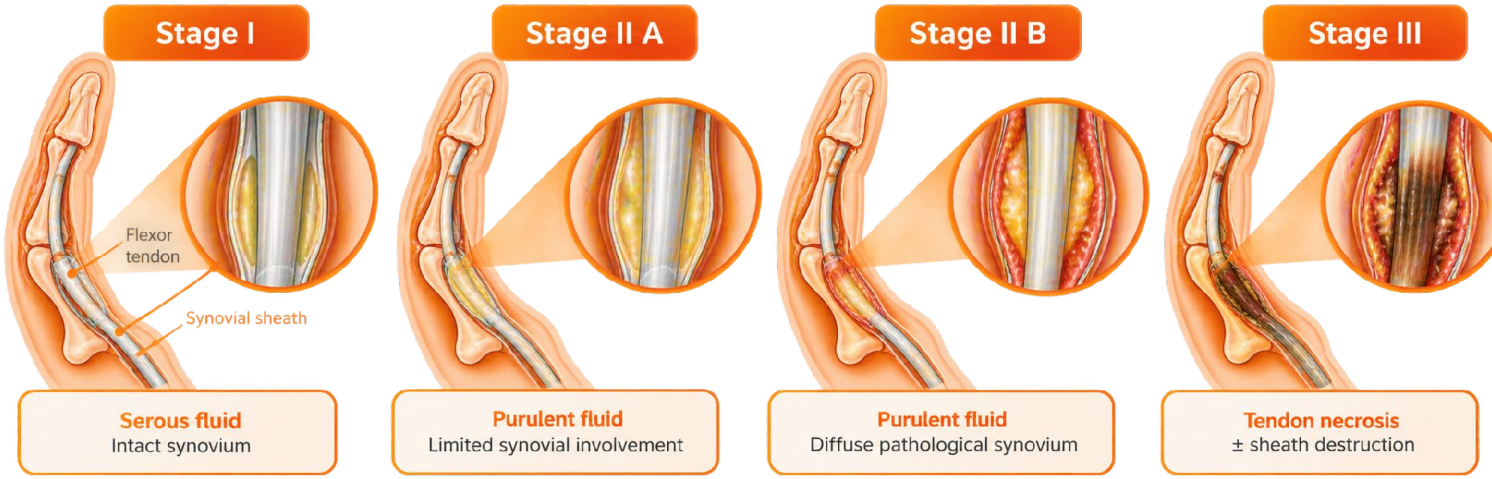
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Staging / Definitions

Intraoperative staging: Michon classification

Treatment failure: need for unplanned surgical
procedure for septic reason



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Management

Anterograde closed catheter irrigation to extended hemi-Bruner incision with tenosynovectomy

Empirical antimicrobial therapy

Immediate mobilization





Included population and management

663 patients
with PFT

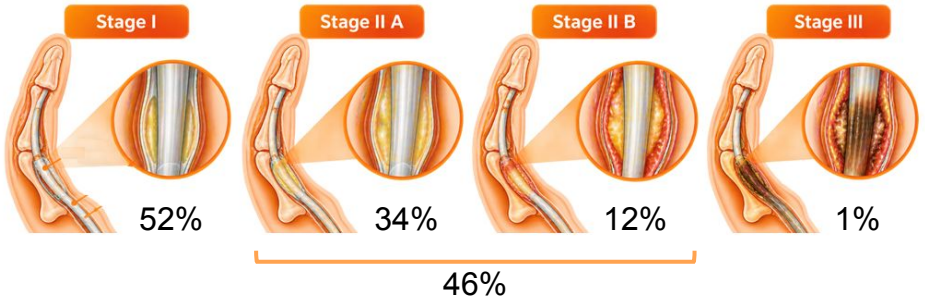
306 with
adjacent infection

**357 patients
with isolated PFT**

65% male
Median age 41
(29-56)
6% Charlson > 2

Main injury mechanisms

- 40% sharp object
- 24% bite
- 13% vegetal



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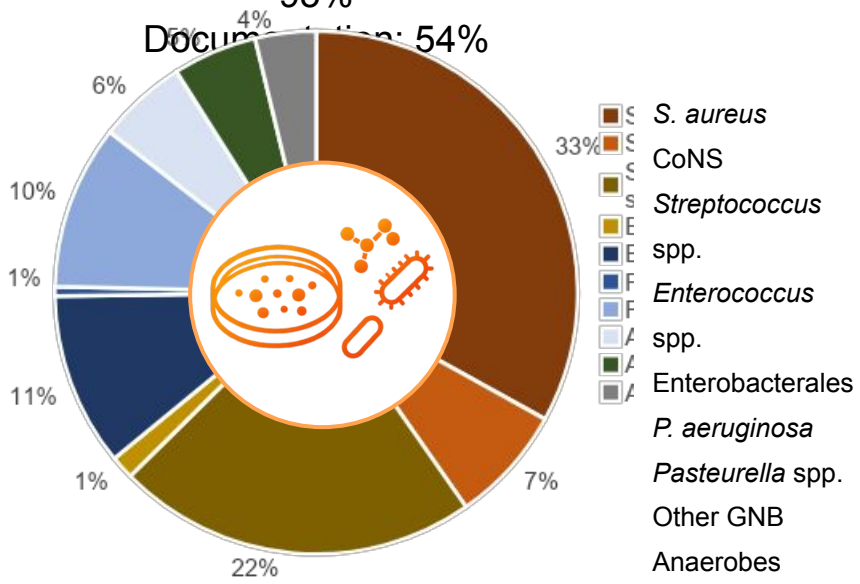
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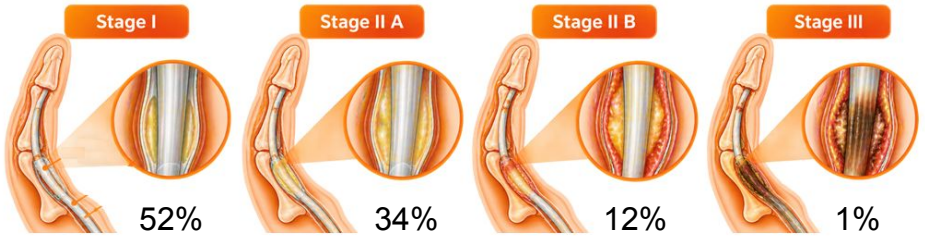
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Microbiological samples: 95%
Documentation: 54%





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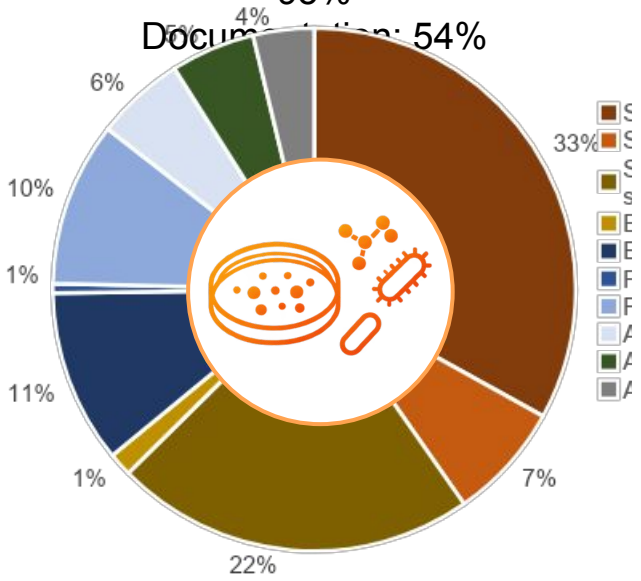
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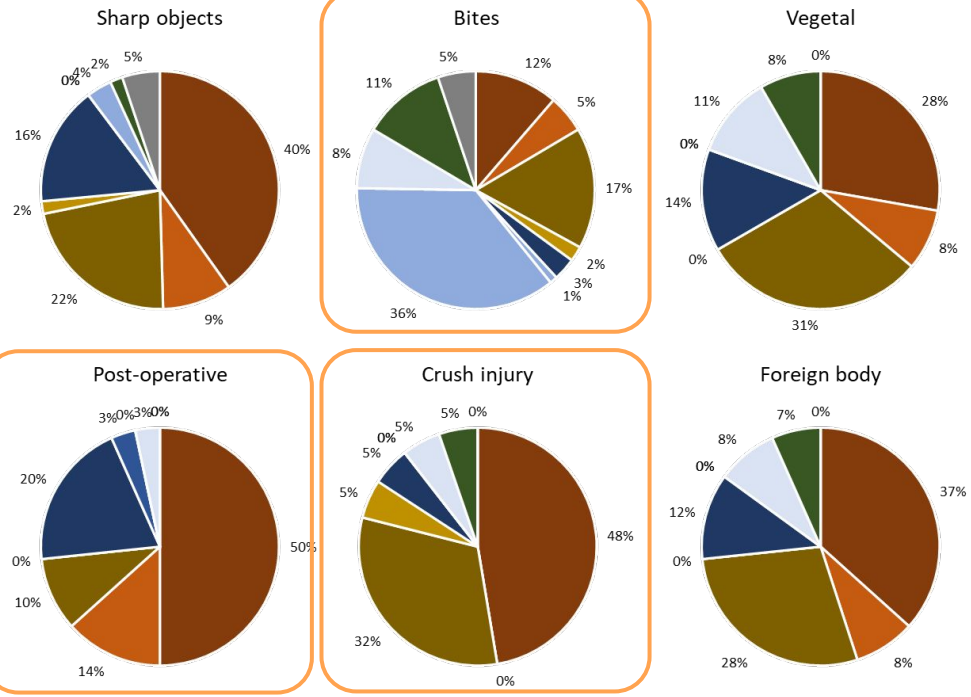
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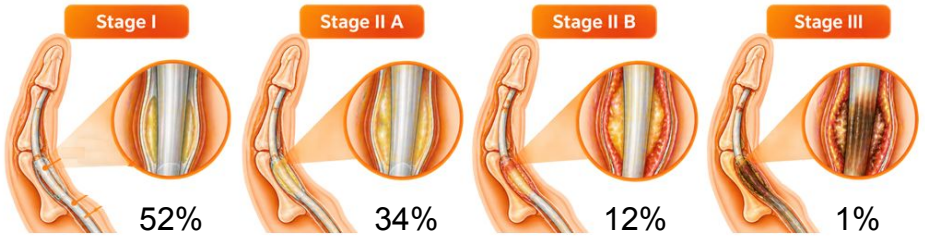
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- *S. aureus*
- CoNS
- *Streptococcus* spp.
- *Enterococcus* spp.
- Enterobacterales
- *P. aeruginosa*
- *Pasteurella* spp.
- Other GNB
- Anaerobes
- Others





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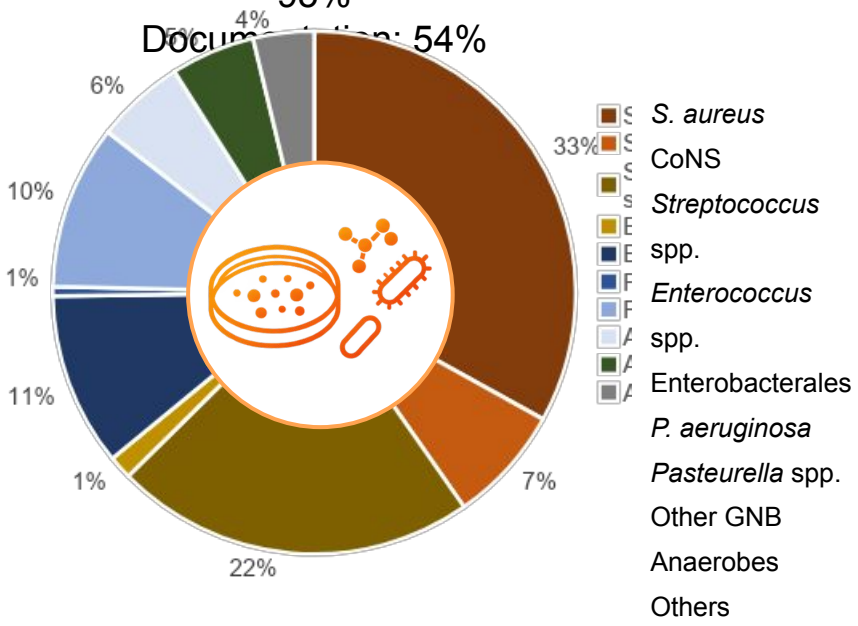
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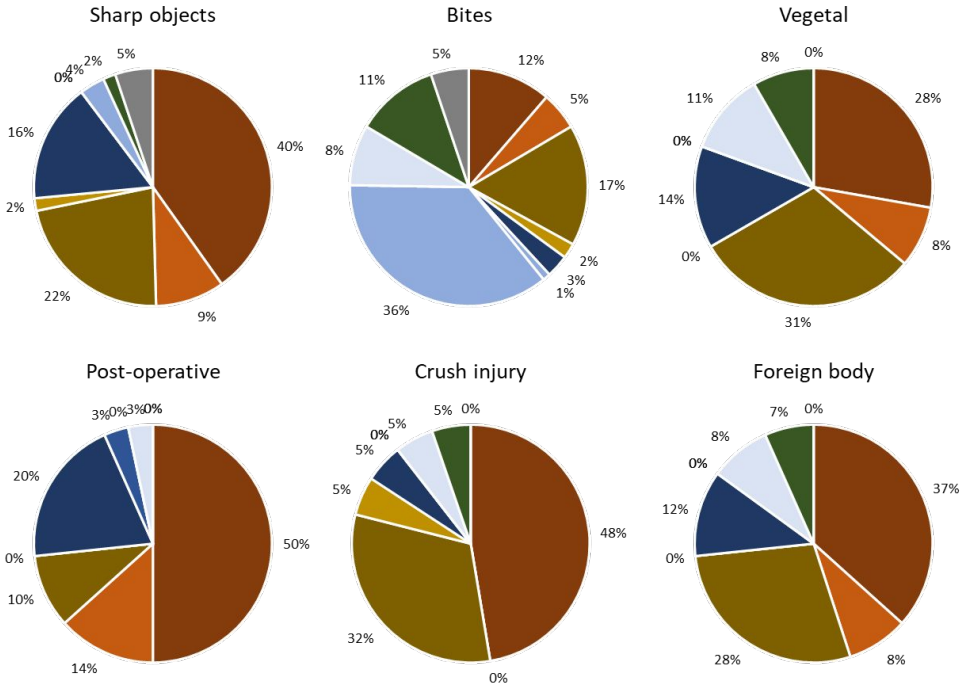
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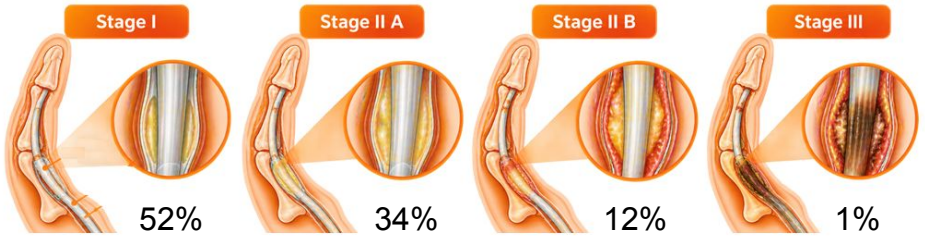
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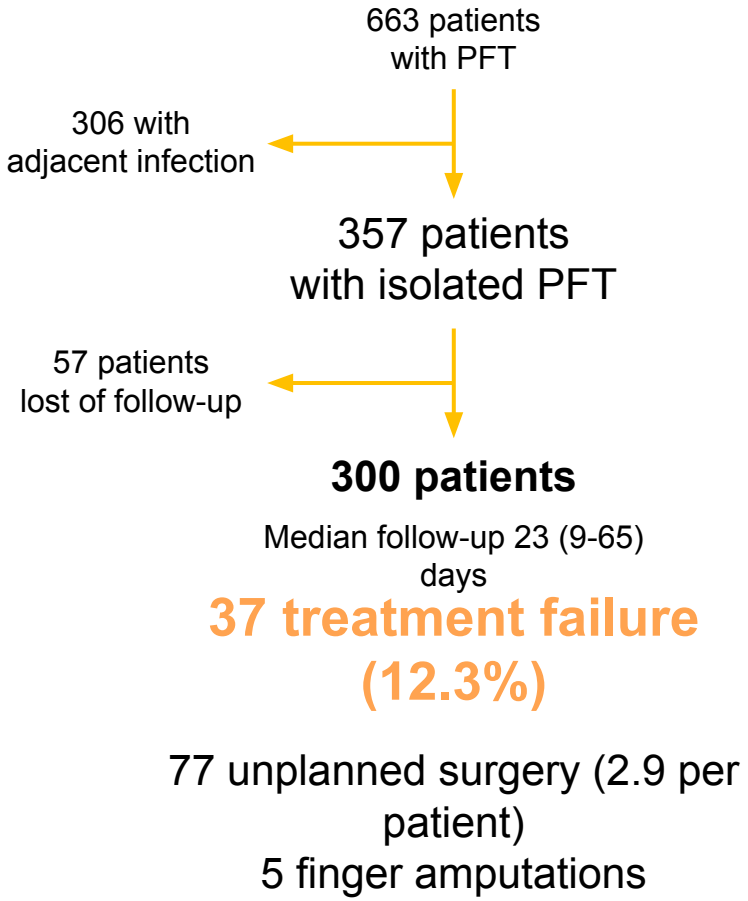
Delay from initial trauma to surgery: 3 (1-7) days
Bipolar lavage: 63% - Extensive tenosynovectomy: 14%

Empirical antimicrobial therapy
- Amoxicilline – clavulanic acid: 87%
- Clindamycin alone: 12%

Efficient empirical ATB: 79%

Treatment duration: 15 (10-17) days

Outcome and determinants of treatment failure



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57 patients lost of follow-up

300 patients

Median follow-up 23 (9-65) days

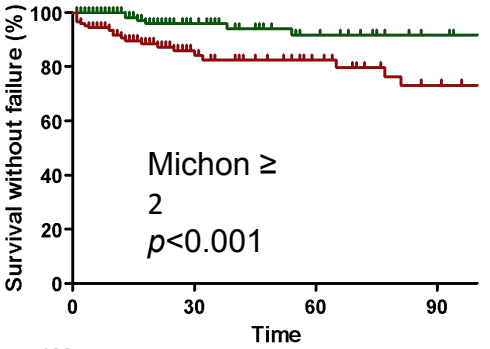
37 treatment failure (12.3%)

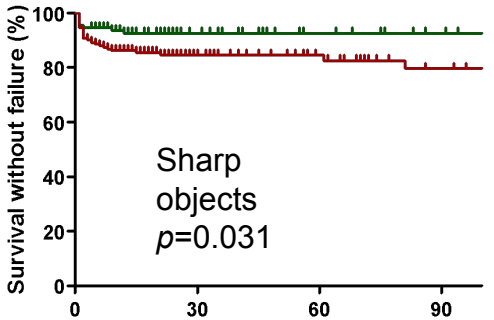
77 unplanned surgery (2.9 per patient)
5 finger amputations

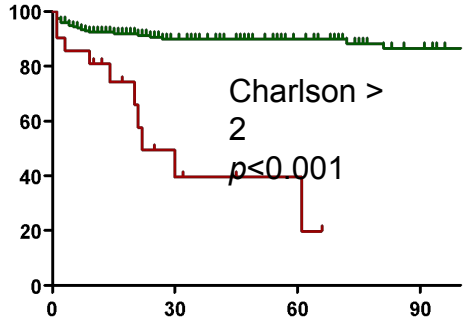


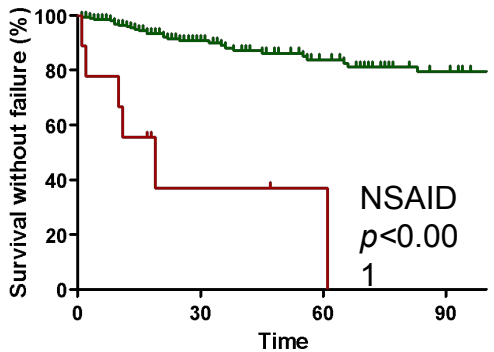
Determinants of treatment failure (univariate analysis)

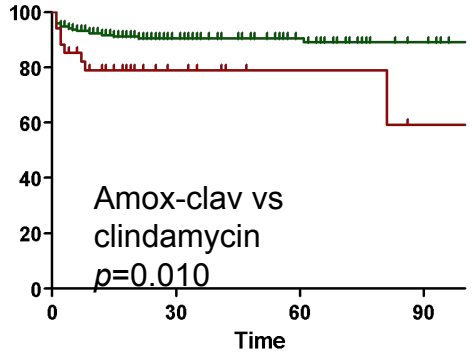
- Age OR 1.629 *p*<0.001
- Charlson > 2 OR 4.167 *p*=0.004
- Sharp object OR 0.405 *p*=0.031
- NSAID OR 3.794 *p*=0.060
- Michon ≥ 2 OR 14.369 *p*<0.001
- Surgery delay OR 1.032 *p*=0.043
- Clindamycine OR 2.889 *p*=0.011











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Functional outcome at last follow-up

- 57% flexion limitation
- 25 neurological complications
- 5 amputations

Functional prognosis factors

- Treatment failure (*p*<0.001)
- Michon grading (*p*<0.001)

Conclusions

Severe infection with substantial morbidity
High treatment failure rate and significant functional sequelae

Surgery is an emergency
Early, stage-adapted surgical management guided by clinical and intraoperative findings

Amoxicillin–clavulanate should be the preferred empirical therapy
Alternative empirical regimens should be tailored to the **mechanism of injury and expected microbiology**

Further studies are needed
to define optimal **stage-adapted medical and surgical strategies**

Aknowledgments

Lyon BJI study group
www.crioac-lyon.fr


Infectiologists

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Nael Ben-Hadid, Thibault Druel, Louis Ducharne, Aram Gazarian,
Selma Lalhali, Laurent Mathieu, Victor Rukta


Microbiologists

Tiphaine Roussel-Gaillard
Céline Dupieux