

Multidisciplinary Treatment Algorithm for Fracture-Related Infection: Integrating Reconstructive Plastic Surgery as a Decision-Making Driver



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INTRODUCTION

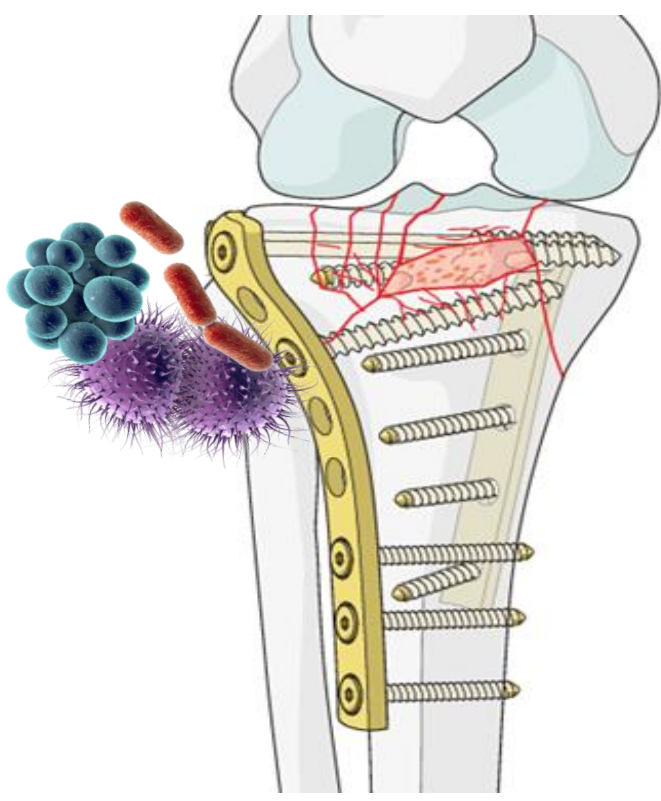
Fracture-related infection (FRI) represents one of the most complex and disabling complications following fracture fixation, particularly in the presence of soft tissue compromise and segmental bone defects. Although several treatment algorithms have been proposed, most remain predominantly bone-centered and rarely incorporate reconstructive plastic surgery as a formal variable in decision-making

AIM

To propose and clinically evaluate a multidisciplinary orthoplastic algorithm in which reconstructive options actively guide the therapeutic strategy.

MATERIAL AND METHOD

Retrospective single center study. Patients with FRI treated according to a multidisciplinary orthoplastic algorithm

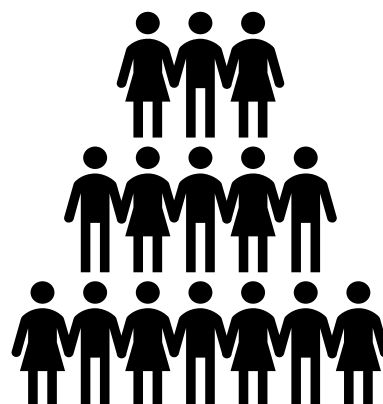


69 FRIs

Jan 2021 – Dec 2023

With at least 1 year of follow-up

27 (39%)
FRI needed
Orthoplastic
approach

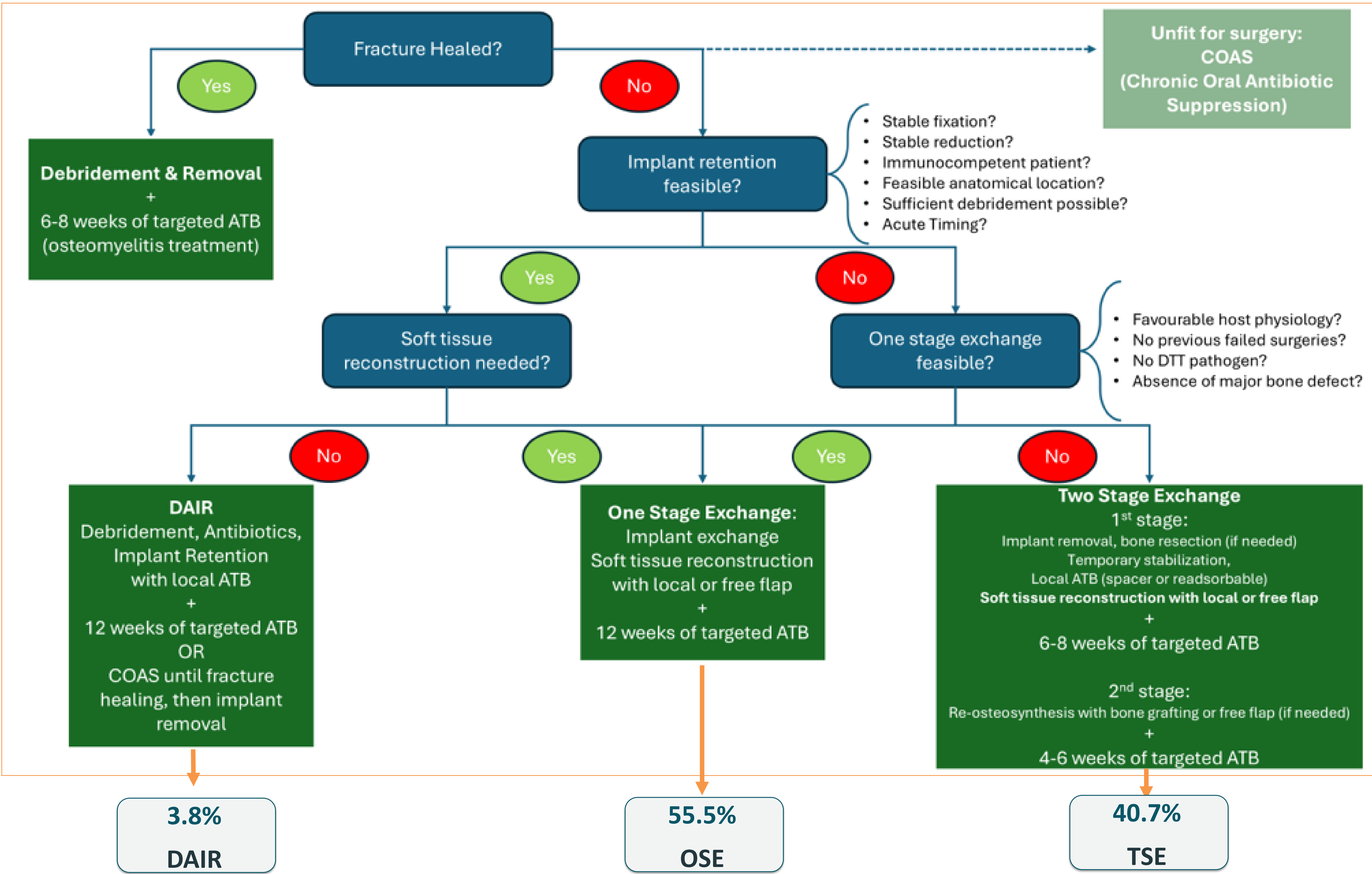


79% males

Median age 55 (IQR 42-69)

RESULTS

TREATMENT ALGORITHM



SOFT TISSUE RECONSTRUCTION

- 4 ALT microsurgical Flap
- 2 Latissimus Dorsi microsurgical Flap
- 9 Medial Gastrocnemius Flap
- 8 Sural Flap
- 2 Keystone Flap
- 2 Emisoleus Flap
- 1 Peroneus brevis Flap

96.3% Fracture healing	88.9% Infection eradication	No total flap loss 3.7% partial necrosis	28.1 ± 15.5 months mean follow-up
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CONCLUSIONS

Early integration of reconstructive plastic surgery allows modulation of the therapeutic strategy in complex FRI. Reconstructive options become a key determinant not only for defect coverage, but also in selecting between conservative and more aggressive approaches, ultimately promoting infection control and bone healing.

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