

# Does Temporary External Fixation Influence The Infection Rate and Clinical Outcomes in Ankle Fractures?

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## Introduction

Ankle fracture-dislocations are unstable injuries requiring urgent reduction to preserve soft tissues. While temporary external fixation (ExFix) provides enhanced stability over splinting, concerns remain regarding increased surgical waiting times and its necessity relative to conservative management.

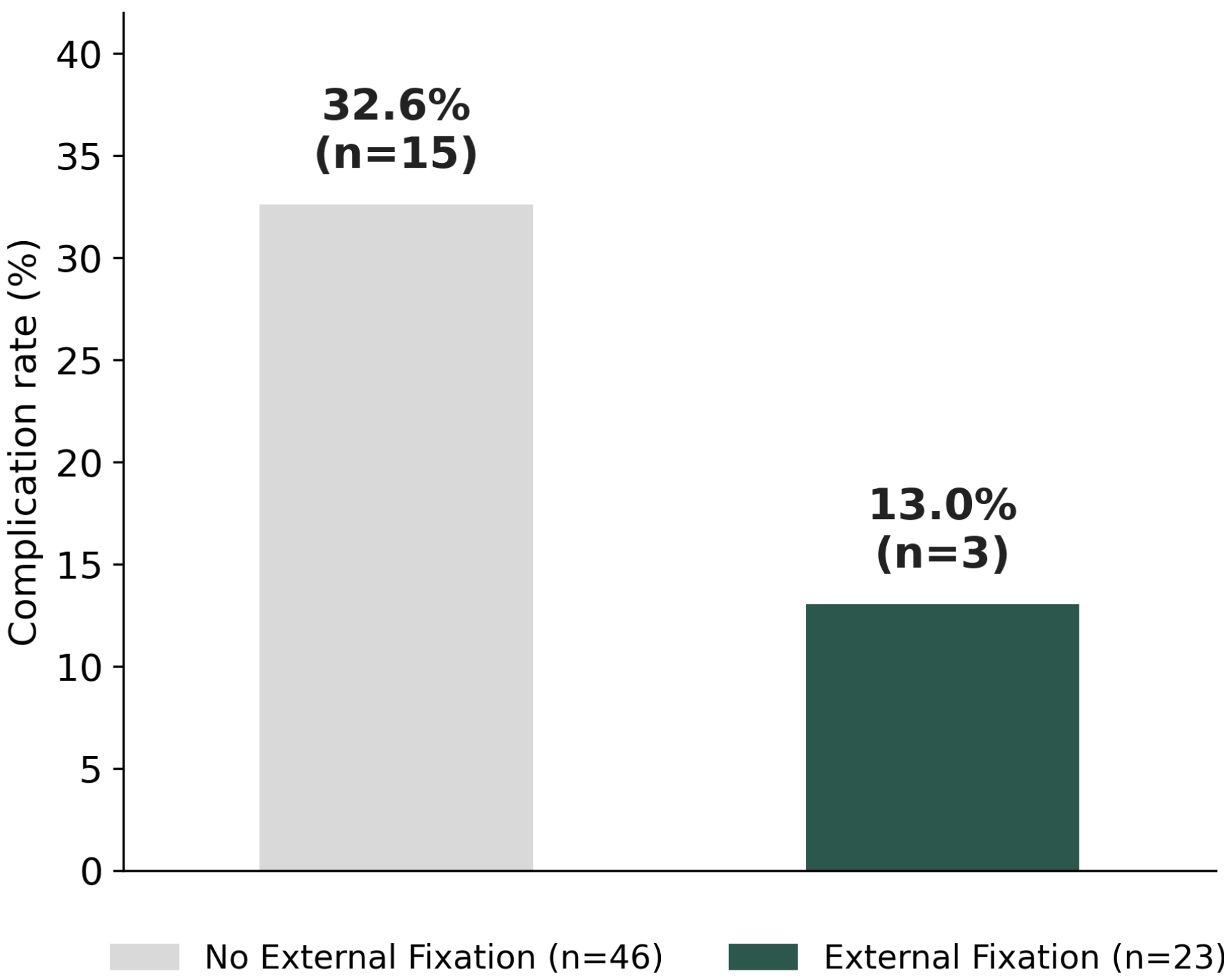
This study aims to compare surgical waiting times, postoperative complications, and functional outcomes between patients treated with temporary EF versus direct definitive surgery.

## Methods

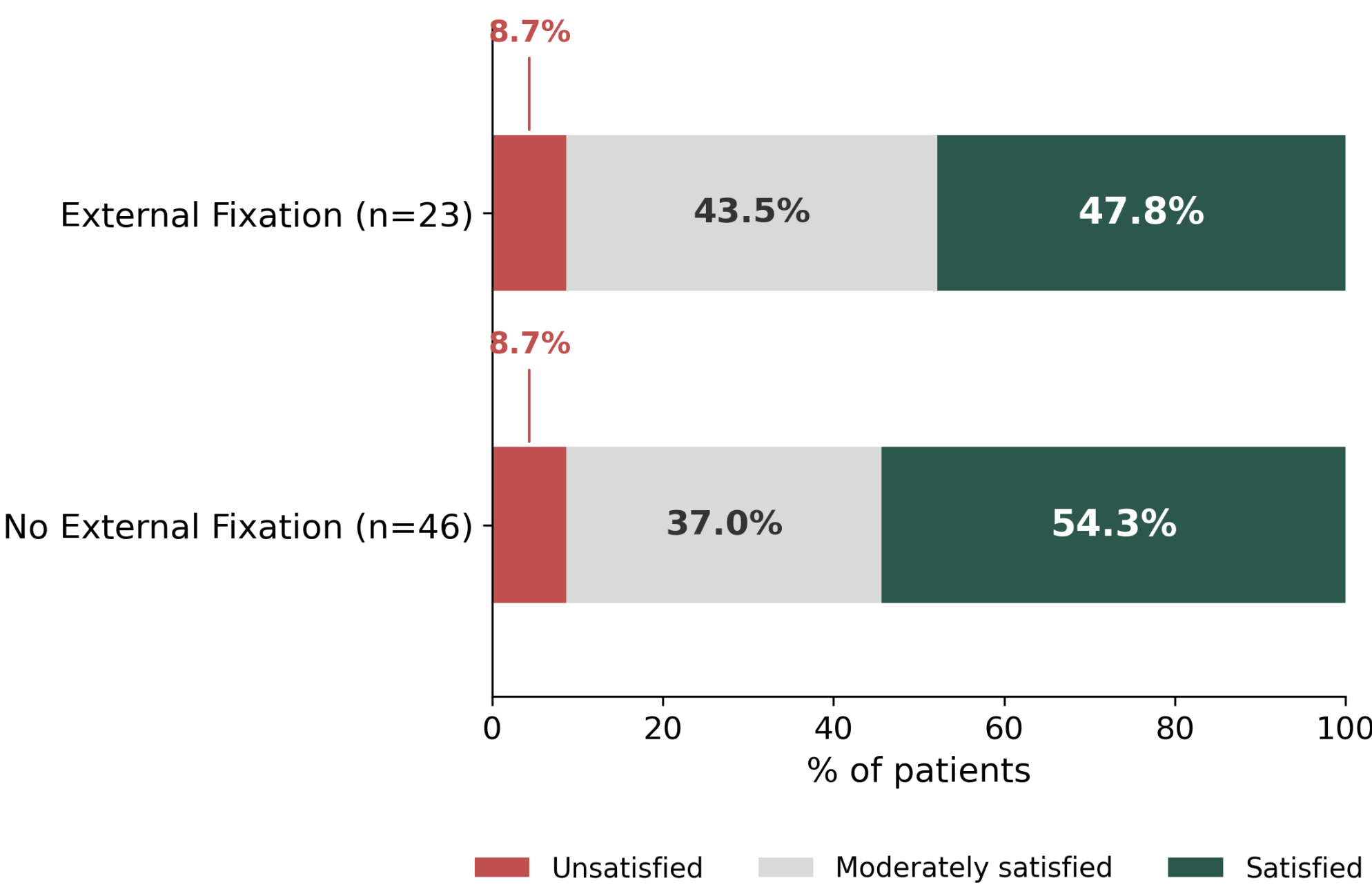
- Retrospective case-control study
- Included ankle fractures or fracture-dislocations who underwent definitive surgical fixation.
- The study group, consisting of patients initially managed with temporary external fixation
- Control group: patients managed without ExFix in a 1:2 ratio
- Demographic data, fracture patterns, and the time interval to definitive surgery were matched and recorded.
- Primary outcomes:
  - Postoperative complication rates
  - Functional status, assessed using a categorical satisfaction scale (“unsatisfied,” “moderately satisfied,” and “highly satisfied”).

## Results

- 69 patients included**
  - Median age 60 years old
  - 57% female
  - 23 (33,3%) treated initially with ExFix
- Trimalleolar fractures** and fracture-dislocations were the most prevalent injury patterns (78%).
- The median waiting time for definitive surgery was **significantly longer in the external fixation** group (14 vs. 5 days).
- Postoperative complications occurred in **18 patients** (26.1%) – Graphic 1. Although the overall difference between groups did not reach statistical significance (p = 0.144)
- Regarding functional outcomes, **52% of patients reported high satisfaction**, including pain-free ambulation. Graphic 2 detail functional outcomes. No statistically significant differences between the two treatment groups (p = 0.126).



Graphic 1. Postoperative complications by treatment group (p = 0.144).



Graphic 2. Functional satisfaction by treatment group.

## Discussion

In this cohort, temporary external fixation is associated with an increased time to definitive surgery but **did not lead to a higher rate of postoperative complications or worse satisfaction**. These findings align with recent literature suggesting that EF and splinting yield similar soft tissue complication rates.

Despite longer waiting times until definitive surgery, **EF remains a safe measure protecting soft tissues that achieves functional outcomes and complications** comparable to direct surgical fixation.

Limitations include the retrospective single-center design, potential selection bias in the choice of external fixation versus direct surgery, and the relatively small external fixation subgroup (n=23), which may limit power to detect true between-group differences.

## References

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