

Nail Bed Repairs, Tuft Fractures, and Rate of Antibiotic Prescriptions

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Introduction

- Injuries to the nail bed and fingertip are the most common injuries to the upper extremity.
- Fractures of the tuft of the distal phalanx are associated with nail bed injuries 50% of the time, and when associated with nail bed lacerations, constitutes an open fracture which may put the patient at risk for osteomyelitis.
- For this reason, it is commonly thought that prophylactic antibiotics may be indicated.
- There is little objective research to support or refute the use of post procedural prophylactic antibiotics in a nail bed with associated tuft fractures.
- Antibiotic use in open fractures of long bones has been widely accepted, but there has been increasing research to minimize antibiotic use in lower grade injuries.

Objective

Our goal was to determine current practice patterns, postoperative infection rates, and patient-specific infection risk factors.

Methods

- This was a retrospective chart review from January 2017 through February 2023 of a single institution's practices of antibiotic prescribing for nail bed injury repairs.
- Patient demographics including handedness, occupation, insurance, and medical comorbidities were collected.
- Procedural information including mechanism of injury, cleanliness, associated tuft fracture, removal of the nail plate, stenting of the eponychial fold, and if antibiotics were prescribed were recorded.
- Follow up information including complications such as infection, reoperation, and continued antibiotic prescription were also recorded.

Results

- Retrospective data for 314 individuals were analyzed with 334 injured fingers.
- 73.5% were prescribed antibiotics, and 64.3% had an associated tuft fracture.
- Of the individuals with associated tuft fractures, 70.6% were prescribed antibiotics.
- Older age, dirty wounds, and associated tuft fractures were associated with increased odds of being prescribed antibiotics, with each variable independently statistically significantly more likely to be prescribed antibiotics.
- The postoperative infection rate, regardless of antibiotic status, was 0.79%.
- The median follow-up duration for those without complication was 12 days, and 20 days for those with complications.
- There was no statistically significant difference in time to postoperative complication regardless of antibiotic status.

Table 1: Antibiotic Prescribing Associations in Nailbed Injuries

Univariate Logistic Regression

Variable	N	Odds Ratio	95% CI		P-Value
Age	314	1.014	1.003	1.026	0.0172
Dirty Injury (ref=Clean)	209	4.211	2.087	8.56	<.0001
Associated Tuft Fracture (ref=No)	304	2.587	1.523	4.412	0.0004

Conclusion

Our findings suggest that the routine prescribing of antibiotics in patients with nailbed injuries both with and without associated tuft fractures may be unnecessary, even though tuft fractures are considered open fractures. Patient demographics, including comorbidities which impede wound healing, and cleanliness of the injury should be considered.