

Delayed Nailing May be Protective Against Infection in Gustilo 3B Tibial Fractures

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INTRODUCTION: The interval between IM nailing and flap coverage has been shown to impact the risk of deep infection in Gustilo type III open tibial fractures. We sought to determine if the injury to IM nailing interval altered the impact of the IM nail to flap coverage interval.

METHODS: The relative risk of deep infection was predicted with log-binomial stratified multivariable spline models that investigated the effects of: time from injury to IM nail, time from IM nail to flap. Based on prior studies, spline nodes were at two, five, and ten days for injury to nail time.

RESULTS: We evaluated 296 patients (227M), avg age 40.±16. The deep infection rate after flap coverage was 26% (78/296). Infection rate decreased with increased injury to nail time and the curve flattening with respect to the subsequent nail to flap time (Figure 1). For each additional day of nail to flap time there was a 6.7% (p=0.01) increased rate of infection for those nailed immediately vs only 2.6% (p=0.17) for those nailed after a delay. The mean number of debridements were 2.4 for 0-2 days days, 2.7 for 2- 5 days, and 3.0 (± 0.68) for > 5 day groups which may contribute to a cleaner bed.

DISCUSSION AND CONCLUSION:

Delays in nailing may be protective against infection in type 3B open tibia fractures. More débridements were performed in when nailing was delayed.

