Do They All Need Surgical Debridement?: Infection in Operative Ankle Fractures

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INTRODUCTION: Surgical site infection (SSI) in operative ankle fractures at Level 1 Trauma Centers may be treated with oral antibiotics as a first line treatment, reducing the need for operative intervention in select patients. We sought to (1) evaluate the efficacy of oral antibiotics amongst operative ankles with SSI, (2) identify differences between patients with superficial infection and ones that develop deep infections requiring surgical management, (3) evaluate the rate of wound complications, reoperation, readmission, and antibiotic complications.

METHODS: Reviewed records of 198 adult ankle fractures treated operatively at a Level I institution from 12/2018-4/2020 to identify patients diagnosed with SSI. Patients were classified into 2 groups, group 1: resolved with antibiotics alone, group 2: required surgical intervention for SSI. Patients who died prior to orthopedic treatment, were lost to follow-up, or had pathologic fractures were excluded.

RESULTS: 33 patients (16.7%) met inclusion criteria: n=12 (6%) with SSI that resolved with oral antibiotics, n=26 (13%) requiring surgical debridement (n=14 had an initial course of antibiotics but still required surgical debridement, n=7 went directly to surgical debridement for SSI). No differences were noted between groups for risk factors for infection. There were no antibiotic complications in patients with oral antibiotics only compared to 23.8% of patients requiring surgical intervention. 81% of patients requiring surgical debridement needed an infectious disease consult and 24% required a PICC line. Patients that required debridement were more likely to have redness ($p=0.041$) localized swelling ($p=0.047$), increased local temperature ($p =0.005$), elevated inflammatory markers ($p <0.001$), and new onset joint effusion ($p =0.005$).

DISCUSSION AND CONCLUSION: Complications were higher in the group treated with surgical intervention, as compared to those treated with antibiotics only. Clinical signs of infection seem to be more prevalent in the group treated with surgical debridement. Oral antibiotic use for suspected SSI in ankle fracture surgery may be effective in select patients. Patients requiring surgical debridement have higher rates of antibiotic complications, resource utilization, and further procedures.