Risk Factors for Wound Complications in Patients after Elective Orthopaedic Foot and Ankle Surgery

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Summary:
The aim of this study was to identify the incidence and risk factors of post-operative wound complications in 298 patients who underwent a primary elective foot and ankle surgery. A total of 50 patients (16.8%) had a wound complication. Using a logistic multiple regression model we identified age ≥ 60 years, tobacco use, and the use of tourniquet time ≥ 90 min as independent risk factors for wound complications. The incidence of wound complications after elective foot and ankle is higher than in patients undergoing primary knee or hip procedures.

Introduction:
Postoperative wound complications have a major impact on patients’ wellbeing, and are a burden for the health care system. The incidence of wound complications is well documented for knee and hip surgery, but only few reports on the incidence after foot and ankle surgery are available. The aim of this study was to determine the incidence and risk factors for wound complications in elective orthopaedic foot and ankle procedures.

Methods:
A prospective assessment of 1139 patients receiving elective foot and ankle surgery between January 2006 and June 2010 was performed. All patients received surgery by a single surgeon and were followed-up postoperatively at the hospital’s outpatient clinic. The inclusion criteria were met by 293 patients (298 procedures; mean age 53.2 y [14.8 – 86.0]). Postoperative wound complications were defined as presence of either one or more of the following: superficial dehiscence, edema, erythema, stitch abscess, wound secretion, and infection. A univariate Cox’s regression test was performed to identify factors for wound complications. These included age, gender, BMI, ASA classification, use of tobacco, diabetes mellitus, type of surgery, operative time, tourniquet use, tourniquet time, duration of hospital stay, and postoperative rehabilitation. Factors associated with an increased incidence of postoperative wound healing problems (significance at p ≤ 0.1) were considered for inclusion in a logistic multiple-regression model with stepwise forward and backward variable selection. Those statistically significant (p ≤ 0.05) factors that remained in the model were considered to be independent predictors of postoperative wound healing problems.

Results:
Of the 298 procedures, a wound complication was noted in 50 (16.8%) cases. This involved 24 men and 26 women, with a mean age of 62.4 years (25.2 – 86.0). The factors found to be significantly associated with the occurrence of wound complications were: age (≥ 50, and ≥ 60), obesity (BMI ≥ 25, and ≥ 30 kg/m2),
use of tobacco, Diabetes mellitus, two or more surgery sites on the same foot, operative time (≥ 60, ≥ 90, and ≥ 120 min), tourniquet time (≥ 90 min), and duration of hospital stay (≥ 7, ≥ 10, and ≥ 15 days). The regression model showed that an age ≥ 60 years, tobacco use and tourniquet time ≥ 90 min were independently associated with a wound complications.

**Conclusion:**
Increased age, tobacco use and prolonged tourniquet time are strongly associated with wound complications in elective orthopaedic foot and ankle surgery.