9:45 am:

**Cigarette Smoking Increases Complication Rate in Forefoot Surgery**

**Presenting:**
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**Summary:**
Cigarette smokers were found to have a significantly higher complication rate (36.4%) in forefoot surgery than patients who previously (16.5%) or never (8.5%) smoked in this retrospective review.

**Introduction:**
Cigarette smoking increases perioperative complications of surgical procedures, however, no literature to date has examined its effect on the complication rate in forefoot surgery. We demonstrate that cigarette smokers have a significantly higher complication rate (36.4%) in forefoot surgery than patients who previously (16.5%) or never (8.5%) smoked in this retrospective review.

**Methods:**
Retrospective medical record review on all patients whom underwent forefoot surgical procedures at our institution between years 2008-2010. Patients were classified into three groups. Group I patients had no history of cigarette smoking. Group II patients smoked cigarettes in the past but stopped prior to date of surgery. Group III patients continued to smoke in the perioperative period. Outcome measures including nonunion, infection, delayed wound healing, delayed union, and persistent pain were recorded while total complications and complication rate were calculated. Chi-Square analysis was performed to determine statistical significance.

**Results:**
633 patients underwent forefoot procedures in years 2008-2010. Cigarette use could be determined from medical records in 602 patients (95%). Group I contained 457 patients with average follow-up of 15.3 months. Group II and III had 79 patients with 18.4 month follow-up, and 66 patients with 11.6 month follow-up, respectively. The percent of patients with diabetes, rheumatoid arthritis, peripheral vascular disease, and steroid use were similar among all groups. Power analysis confirmed adequate sample size to detect significance. The number of patients with a complication occurring in each group were: Group I – 39 (8.5%), Group II – 13 (16.5%), and Group III – 24 (36.4%). There is a statistically significant (p<0.0001) increase in complication rate associated with cigarette smoking. The rate of nonunion, infection, delayed wound healing, delayed union, and persistent pain each showed statistically significant variation among each group. Those patients that continued to smoke in the perioperative period had the highest percentage of delayed union (3.0%), infection (9.1%), delayed wound healing (10.6%), and persistent pain (15.2%).

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Conclusion:
This is the first study to examine complication rate associated with cigarette smoking in forefoot surgery. Cigarette smoking significantly increases complications in those patients undergoing forefoot procedures with 36.4% of current cigarette users suffering a complication. Surgeons should educate patients who smoke cigarettes on the increased incidence of complications prior to forefoot surgery and support those patients through smoking cessation.