Co-Morbidities Are Associated with Increased Cost, Infection Rates, and Duration of Treatment after Primary Achilles Tendon Repair

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Introduction/Purpose: The purpose of this study was to assess the rate of surgical site infection (SSI) and surgical irrigation and debridement (I&D) after primary Achilles tendon repair. Secondary objectives were to assess the potential effect(s) of medical comorbidities on cost and duration of treatment of SSI after Achilles tendon repair.

Methods: De-identified patient insurance records within the government and private national insurance orthopaedic datasets were searched between 2005-2012. The Current Procedural Terminology (CPT) code was used to identify primary Achilles tendon repair and I&D. Subsequently, post-operative SSIs and comorbidities were examined by searching corresponding International Classification of Disease Ninth Revision, Clinical Modification (ICD-9-CM) codes.

Results: 24,269 primary Achilles tendon repairs were identified. Overall, there was a significantly increased rate of SSI if a medical comorbidity was present at the time of surgery compared to those without a comorbidity (17.96% vs. 5.96%, p < 0.0001). Patients with diabetes and vascular complications had the highest SSI rate (OR 7.85, CI 6.25-9.86, p < 0.001), followed by peripheral vascular disease, diabetes with peripheral neuropathy, history of drug abuse, fluid and electrolyte abnormalities, obesity, and uncomplicated diabetes. There was higher rate of surgical I&D in patients with cardiac arrhythmias and uncomplicated hypertension. There was a significant increase in cost of SSI treatment ($6,004.09 vs. $4,184.62, p=0.006) and duration of treatment (8.41 days vs. 5.54 days, p < 0.001) if a medical comorbidity was present in Achilles tendon patients with SSI.

Conclusion: An analysis of a large cohort of patients undergoing Achilles tendon reconstruction revealed that having certain medical comorbidities conferred a significantly greater risk for
developing SSI, which increased both the cost of subsequent care and duration of treatment. Furthermore, with the advent of “value”/outcomes based care being linked to reimbursement, SSI is a measure being used by the Centers for Medicare & Medicaid Services and private insures to determine appropriate orthopaedic care. Thus, patients with modifiable risk factors should be referred for medical management prior to surgery or deferred to a non-operative treatment program to reduce the risk of SSI after Achilles tendon repair.