

Diabetic Sequelae and Ankle Fractures: Significant Associations with Postoperative Complications

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Purpose: This study uses a large database design to evaluate the effect of diabetic sequelae on the risk of complications following operative management of ankle fractures.

Methods: A national claims-based database (PearlDiver) was queried for patients who underwent operative management of ankle fractures. Patients were divided into diabetics and non-diabetics. Both cohorts were subdivided into 5 groups: neuropathy, chronic kidney disease (CKD), peripheral vascular disease (PVD), multiple sequelae, and no sequelae. Two-year postoperative complication rates were examined, including deep vein thrombosis (DVT), surgical site infection, below knee amputation (BKA), revision internal fixation, conversion to ankle fusion, and hospital readmission within 90 days of treatment.

Results: 210,069 patients who underwent operative ankle fracture treatment were identified; 174,803 had no history of diabetes, and 35,266 were diabetic. Table 1 displays the numbers of patients in each diabetic subgroup. When compared to diabetic patients without sequelae, diabetic patients with sequelae generally had higher complication rates as outlined in Table 1. Notably, all groups of diabetics with comorbidities had much higher odds of BKA than diabetics without comorbidities. For diabetics with neuropathy, the odds ratio (OR) for BKA was 6.04, for diabetics with CKD the OR was 4.28, for diabetics with PVD the OR was 9.69, and diabetic patients with multiple sequelae had an OR for BKA of 31.94.

Conclusion: Diabetic patients with sequelae of neuropathy, CKD, or PVD generally had higher complication rates than diabetic patients without these diagnoses. Diabetic patients with multiple comorbidities are at the highest risk of complications and had the highest ORs of all complications. Our analysis demonstrates that diabetic CKD represents a significant risk factor for complications following operative management of ankle fractures.

POSTER ABSTRACTS

**Complication Rates After Operatively Treated Ankle Fractures:
Odds Ratios Compared to Diabetics Without Sequelae (N = 7506)**

	Hospital Readmission	DVT	Infection	BKA	Conversion to Ankle Fusion	Revision Internal Fixation
All Non-diabetics (N = 174,803)	0.83*	0.80*	0.63*	1.05	0.67*	0.82*
Diabetics With Neuropathy (N = 8994)	1.67*	1.18*	1.35*	6.04*	2.66*	1.33*
Diabetics With CKD (N = 4961)	1.54*	1.34*	1.01	4.28*	1.3	1.02
Diabetics With PVD (N = 1498)	1.80*	1.75*	0.99	9.69*	1.62*	1.08
Diabetics With Multiple Sequelae (N = 12307)	2.96*	1.97*	2.64*	31.94*	4.84*	1.94*

* indicates p < 0.05

The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device they wish to use in clinical practice.