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Complications After Ankle Fracture Due to Diabetes Mellitus

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Objective: To evaluate complications after ankle fractures in persons with and without diabetes. **Methods:** We performed a retrospective case-control study of 206 diabetics (DM) and 399 non-diabetics (Non-DM) with ankle fracture (100 DM and 200 Non-DM treated conservatively and 106 DM and 199 Non-DM treated surgically). We evaluated the incidence of wounds, non-unions (non-healing > 4 months), hardware failure, amputation, Charcot Arthropathy, pain (>1year), and the need for bracing (>1year). **Results:** DM patients were older than Non-DM in both surgical (DM: 59.4/Non-DM: 48.7) and conservative (DM: 68.7/Non-DM: 57.5) groups. The majority of patients in both groups were women (65-74%). DM patients were significantly more likely to have complications after an ankle fracture when compared to Non-DM patients. In the surgical group, fractures were more severe in Non-DM (DM: Trimalleolar-27.4%, Bimalleolar-46.2%, Unimalleolar-19.8%; Non-DM: Trimalleolar-60.3%, Bimalleolar-25.6%, Unimalleolar-7.5%)($p<0.05$). In the conservative group, the majority of fractures were unimalleolar in both DM and Non-DM (DM: Unimalleolar-100%; Non-DM: Trimalleolar-2%, Bimalleolar-8.5%, Unimalleolar-89.5%). Non-unions were 9.9 - 28.1 times more likely in both groups of DM. Incidence of Charcot Arthropathy and amputation in DM was much higher than reported in the general population. In the surgical group, the incidence of hardware failure was 3x higher in DM. The incidence and severity of infection was increased in the diabetic group ($p=0.05$). **Conclusion:** Diabetics with ankle fractures have a much higher rate of complications and worse clinical outcomes than their non-diabetic controls.