Weight Bearing Compliance after Foot and Ankle Surgery

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Category: Other

Keywords: Patient Compliance Weightbearing Non-weightbearing Surgery

Introduction/Purpose: Patients are frequently required to maintain a non-weight bearing (NWB) status after foot and ankle surgery in order to prevent post op complications. Adherence to these instructions is of paramount importance and lack of compliance may lead to wound breakdown, loss of fracture fixation, or hardware failure. Unfortunately due to a number of factors, patients are frequently unable to comply with their weight bearing (WB) requirements. Lack of compliance has recently been demonstrated in studies as it relates to either partial or NWB instructions. This study examined rates of non-compliance in a socioeconomically disadvantaged population with results showing an 88% non-compliance rate. We present preliminary data on WB compliance and further seek to identify demographic data and risk factors possibly contributing to this epidemic.

Methods: Pressure sensing films (70-350 PSI) were used for this study. When pressure is applied, the film turns an intense pink color. After lower extremity surgery is performed patients are placed in a short leg plaster splint. The sensor is placed superficial to the plaster/webril. One sensor is placed beneath both the forefoot and one beneath the hind foot and the splint is then marked with an “S” to indicate study participation. Once the patient follows up, either the attending physician or a certified cast technician will retrieve the sensors for documentation. An additional sensor is placed on a non-weight bearing portion of the anterior tibia to serve as a control. After retrieval of sensors, results are analyzed by at least 4 team members to decide on WB compliance. Pink coloration of 30% or more is considered positive in our study.
**Results:** At the time of this abstract, 25 patients had returned for follow up. 22/25 (88%) patients were found to have at least 1 out of 2 sensors positive. 13/25 (52%) had both forefoot and hind foot sensors positive. 3 patients had both sensors without any pressure changes. 5 patients had lost at least 1 sensor.

**Conclusion:** To date, 88% of our patients have been found to be non-compliant with their weight bearing status instructions. The results of this study agree with previous studies demonstrating a high rate of non-compliance even after education and instruction. Our study exhibited a higher rate of non-compliance when compared to other studies, possibly due to patient demographics. More data is needed to ascertain the effect of certain risk factors in order to identify the proper method of patient education/instruction and to possibly create a standardized weight bearing compliance educational program.