

**A Ticking Time Bomb in the Hip? Does Time to Surgery Predict Outcome in Elderly Hip Fractures?**

*Neil Werthmann, MD; John Riehl, MD; Minn H. Saing, MD*

**Purpose:** Time to surgery (TTS) has previously been identified as a factor in morbidity and mortality following hip fractures in the elderly. The primary aim of the current study was to determine whether there is a difference in outcomes when surgery is performed within 24 hours compared to 24-48 hours and >48 hours.

**Methods:** Data were collected prospectively through an institutional database of 9440 patients with hip fractures. Patients >65 years old with a femoral neck or peritrochanteric femur fracture were identified. Initial assessment TTS, American Society of Anesthesiologists (ASA) score, and additional patient information were recorded. Outcomes noted were length of stay (LOS), readmission, medical complications postoperatively, and discharge destination within 1 year of treatment.

**Results:** TTS and ASA score were significantly associated with the likelihood of developing a postoperative medical complication ( $P<0.0001$ ). When compared with TTS <24 hours, medical complications were 1.346 times as likely with TTS 24-48 hours ( $P<0.05$ ) and 1.79 times as likely at >48 hours ( $P<0.0001$ ). Increased ASA ( $P<0.001$ ) and no diagnosis of dementia ( $P<0.0001$ ) were significant associations for readmission within 30 days. ASA remained associated with an increase in readmission within 1 year of surgery ( $P<0.01$ ). TTS was not associated with an increase in readmission at 30 days or 1 year. Longer hospital stays were associated with TTS ( $P<0.0001$ ), operating time ( $P<0.05$ ), medical comorbidities ( $P<0.05$ ), and ASA ( $P<0.05$ ). Mortality was increased with increasing TTS on index encounter, at 30 days, and 1 year.

**Conclusion:** Although TTS was a predictor of postoperative medical complications and LOS, there was no increase in 30-day or 1-year readmissions with increased TTS. ASA was significantly associated with postoperative complications, 30-day and 1-year readmissions, and LOS. While most outcomes (such as readmission) were similar based on TTS, increasing TTS was associated with increased mortality and longer hospital stays at all time points. Based on mortality rates, hospital systems should provide operating room availability for hip fractures within 24 and 48 hours. Unnecessary or extraneous testing should be avoided preoperatively in order to prevent delays to surgical intervention.