Methamphetamines & acetabular reoperation rates: Poor outcomes from the front lines

David M. Gallacher, BS; Natalie L. Zusman, MD; Erik Woelber, MD; Natasha S. McKibben, BS; Austin R. Thompson, BS; Darin M. Friess, MD; Zachary M. Working, MD

Oregon Health & Science University

Purpose

Per the US Census data, the West Coast houses the region with the highest amount of substance abuse admissions for methamphetamine.

Methamphetamine abuse is associated with negative surgical outcomes, particularly regarding reoperation rates and survival probability.

In this study we compare the acetabular reoperation rates after 1 year in meth abusers vs. non-users.

Methods

A retrospective chart review was performed looking at adult patients who presented to our center between 2008-2018 undergoing a unilateral traumatic acetabular ORIF.

Inclusion required documentation of methamphetamine abuse via patient report or a positive urine toxicology screen.

Logistic regressions were used to determine the association between meth use and reoperation within one year, and further investigated using a Cox proportional hazards model.

Results

13% (36/268) of patients who experienced acetabular fractures abused meth. On average, meth abusers were 8 years younger and sustained higher rates of high-energy mechanisms; 66% were associated patterns.

The unadjusted odds-ratio of 1-year reoperation in patients who use meth was OR 2.63 (p=0.03), rising to an adjusted OR of 3.13 (Fig 1). The unadjusted risk of reoperation for meth abusers was 17% at 90 days and 25% at 1 year.

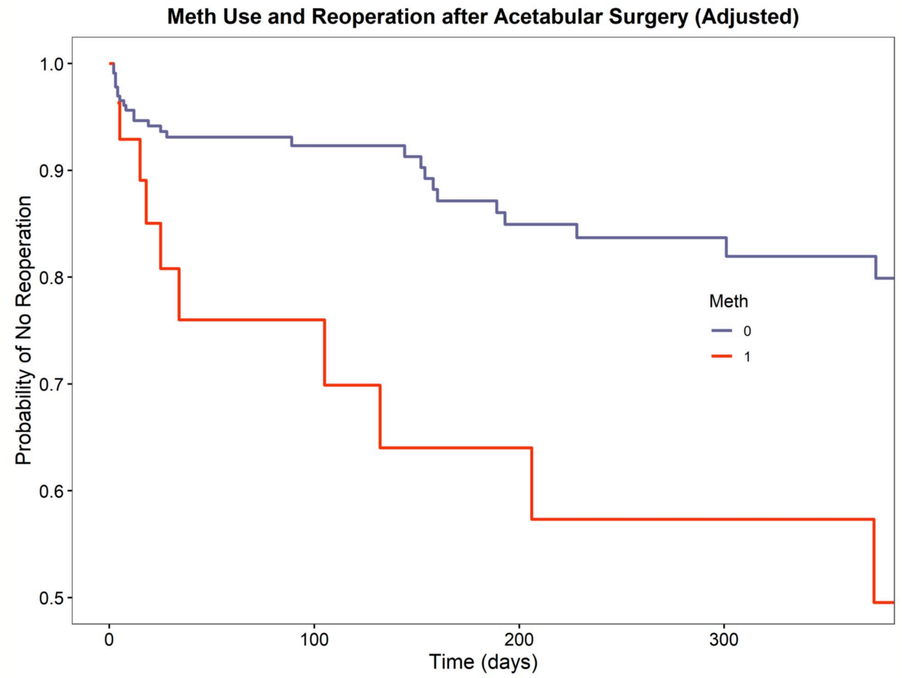

Figure 1: Cox proportional hazards model for association between meth use and reoperation following acetabular surgery

Conclusion

Surgical fixation of acetabular fractures in methamphetamine abuser showed a 3-fold increase in adjusted odds ratio for 1-year reoperation rates.

We recommend this data be used by surgeons going forward to help with planning and discussion of how they can best approach operating on this high-risk population.

Citations

Gemma VA, Chapple KM, Goslar PW, et al. Crisis under the radar: Illicit amphetamine use is reaching epidemic proportions and contributing to resource overutilization at a Level I trauma center. Journal of Trauma and Acute Care Surgery. 2018 Nov;85(5):953–959.

Malik AT, Quatman CE, Phieffer LS, et al. 30-day adverse events, length of stay and re-admissions following surgical management of pelvic/acetabular fractures. Journal of Clinical Orthopaedics and Trauma. 2019 Sep;10(5):890–895.