

# Femoral Neck Fracture Cases:

*Things we can disagree on...*

---

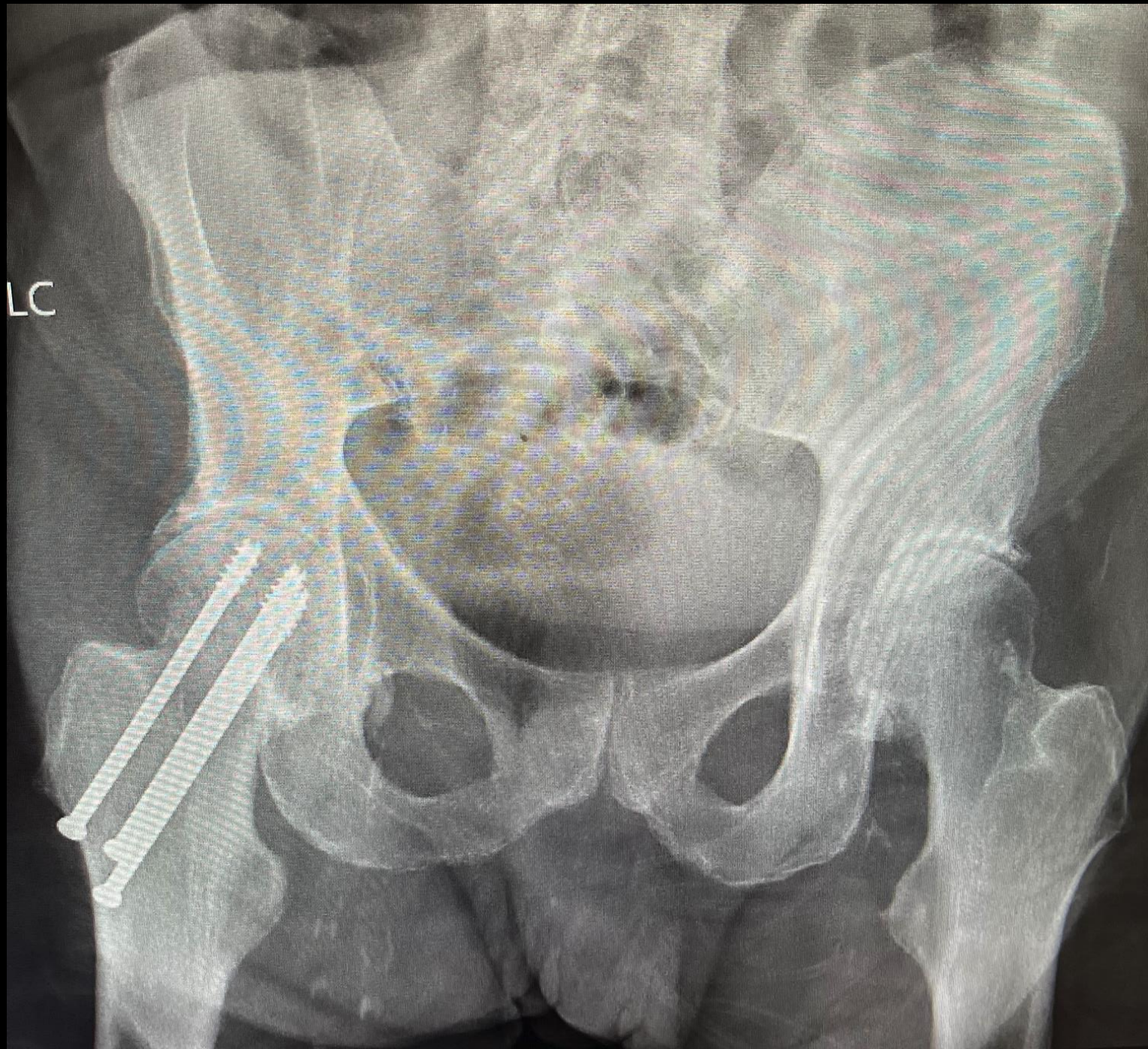
Paul Toogood, MD  
UCSF Department of Orthopaedic Surgery  
Orthopaedic Trauma Institute  
San Francisco General Hospital



**85yo M GLF**  
**Walker at baseline**



**CRPP or Hemi?**

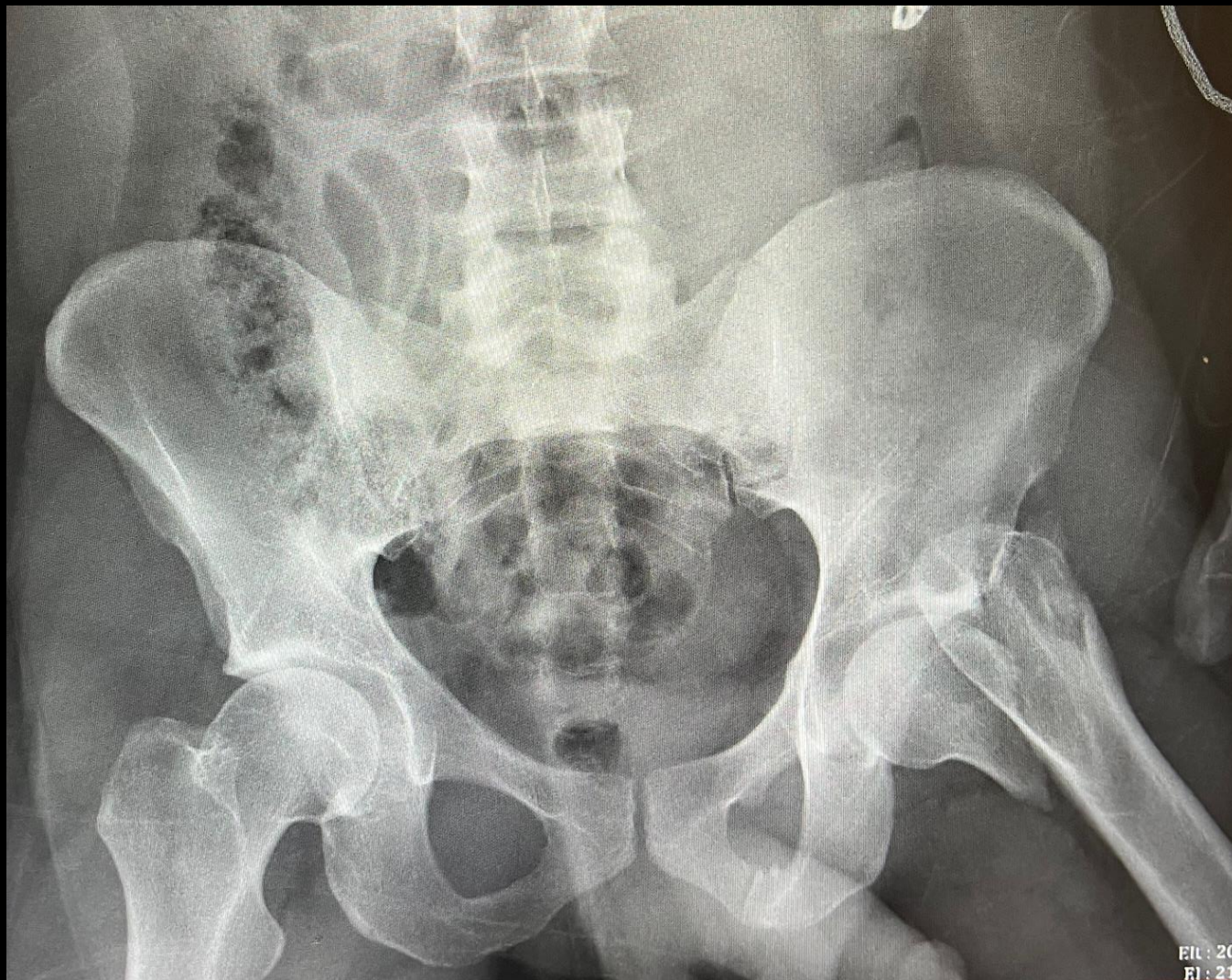


# Screw Fixation Versus Hemiarthroplasty for Nondisplaced Femoral Neck Fractures in Elderly Patients

## A Multicenter Randomized Controlled Trial

Filip C. Dolatowski, MD, Frede Frihagen, MD, PhD, Stefan Bartels, MD, Vidar Opland, MD, Jūratė Šaltytė Benth, PhD, Ove Talsnes, MD, PhD, Sigurd Erik Hoelsbrekken, MD, PhD, and Stein Erik Utvåg, MD, PhD

**Results:** Between February 6, 2012, and February 6, 2015, 111 patients were allocated to screw fixation and 108, to hemiarthroplasty. At the time of follow-up, there was no significant difference in hip function between the screw fixation and hemiarthroplasty groups, with a 24-month HHS (and standard deviation) of  $74 \pm 19$  and  $76 \pm 17$ , respectively, and an adjusted mean difference of  $-2$  (95% confidence interval [CI] =  $-6$  to  $3$ ;  $p = 0.499$ ). Patients allocated to hemiarthroplasty were more mobile than those allocated to screw fixation (24-month TUG =  $16.6 \pm 9.5$  versus  $20.4 \pm 12.8$  seconds; adjusted mean difference =  $6.2$  seconds [95% CI =  $1.9$  to  $10.5$  seconds];  $p = 0.004$ ). Furthermore, screw fixation was a risk factor for a major reoperation, which was performed in 20% (22) of 110 patients who underwent screw fixation versus 5% (5) of 108 who underwent hemiarthroplasty (relative risk reduction [RRR] =  $3.3$  [95% CI =  $0.7$  to  $10.0$ ]; number needed to harm [NNH] =  $6.5$ ;  $p = 0.002$ ). The 24-month mortality rate was 36% (40 of 111) for patients allocated to internal fixation and 26% (28 of 108) for those allocated to hemiarthroplasty (RRR =  $0.4$  [95% CI =  $-0.1$  to  $1.1$ ];  $p = 0.11$ ). Two patients were lost to follow-up.



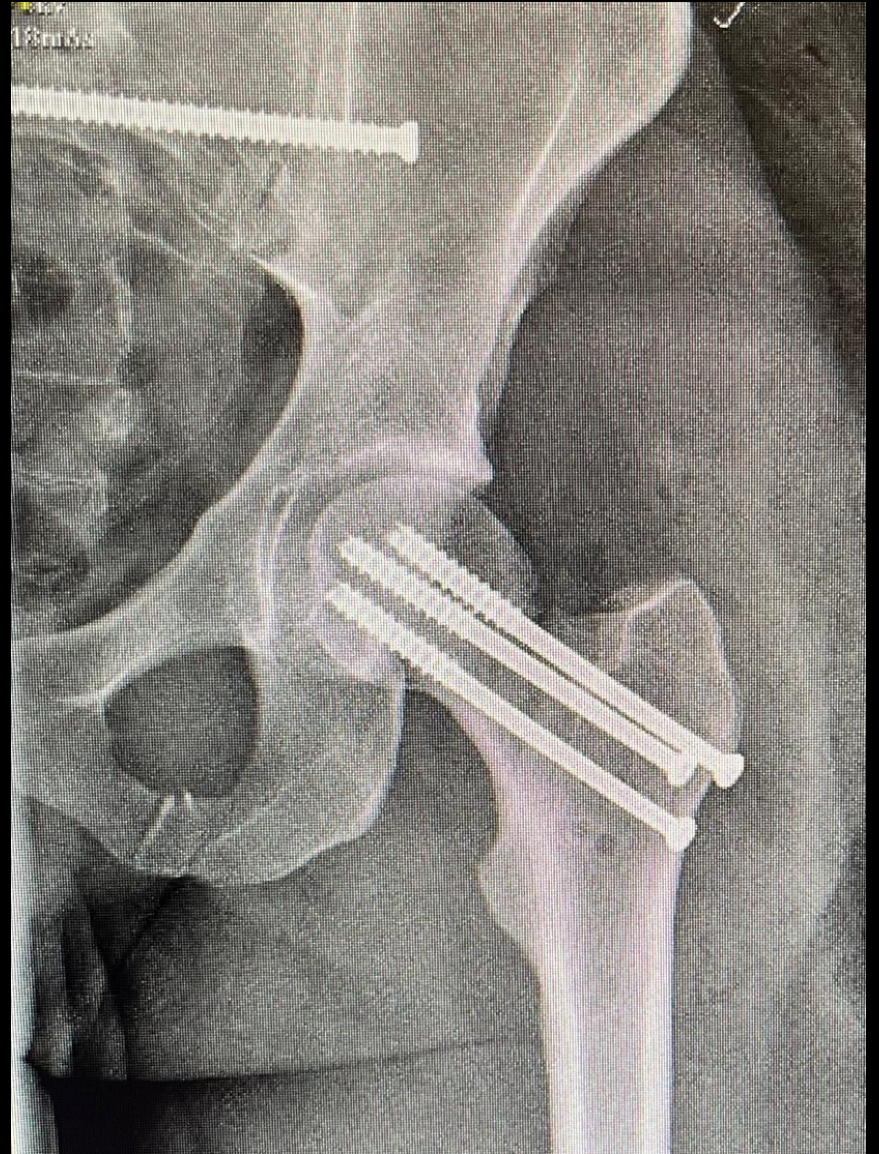
**28yo M PVA**

**-Displaced  
FNF**

**-3A open tibia**

**-LC pelvis fx**

**Closed or Open  
Reduction?**



# Delayed internal fixation of fractures of the neck of the femur in young adults

A PROSPECTIVE, RANDOMISED STUDY COMPARING CLOSED AND OPEN REDUCTION

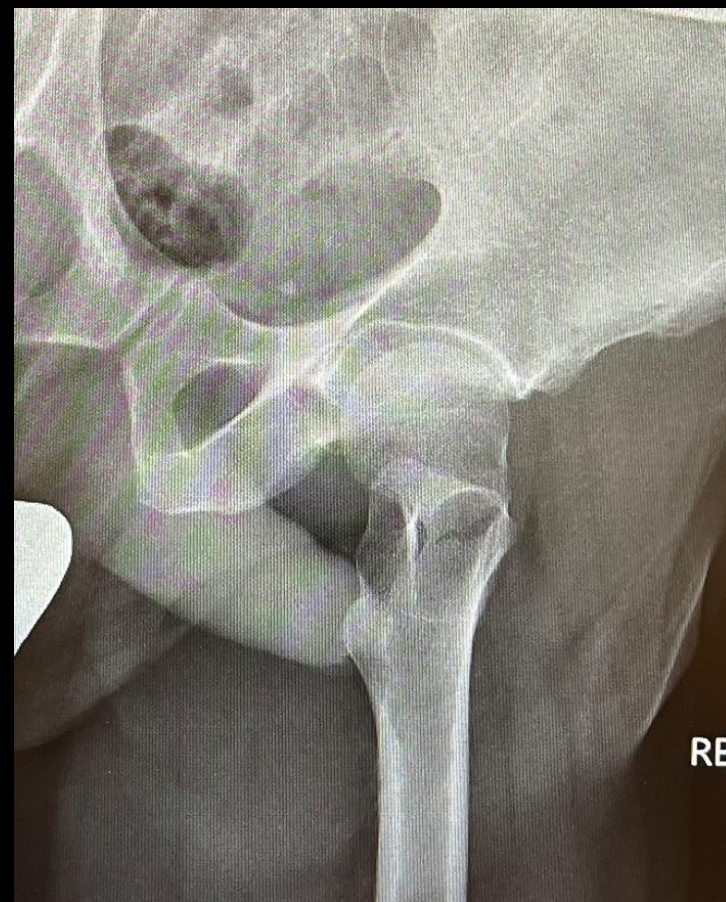
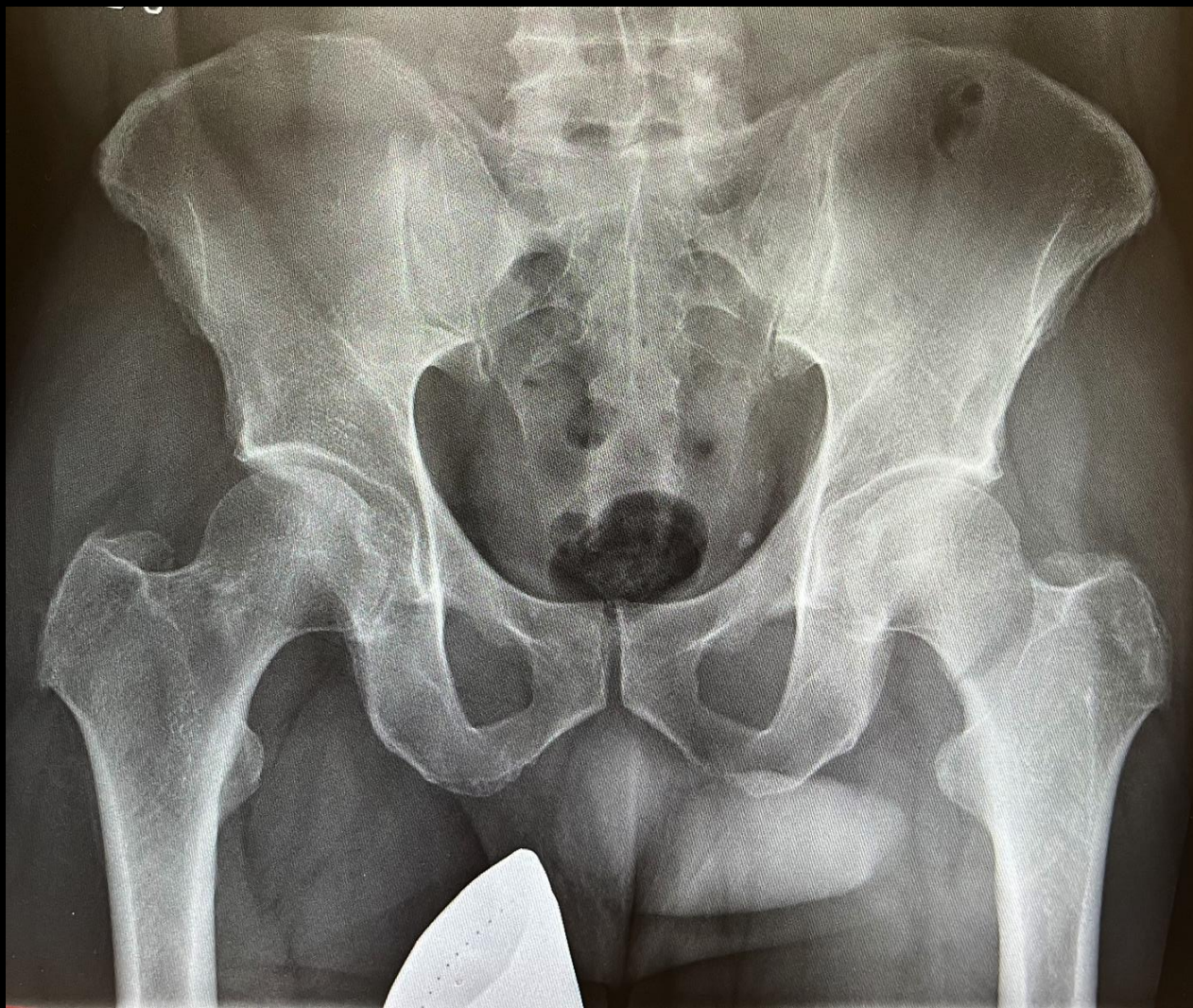
**Table IV.** Relative risk of nonunion

Variable	Number	Nonunion
		Number (%)
Posterior comminution	21	13 (61.9)
Reduction		
Grade I	39	0 (0.0)
Grade II	38	6 (15.8)
Grade III	15	10 (66.7)
Improper screw placement	30	9 (30)
Delay >48 hrs	42	7 (16.7)

# Open Reduction Is Associated With Greater Hazard of Early Reoperation After Internal Fixation of Displaced Femoral Neck Fractures in Adults 18–65 Years

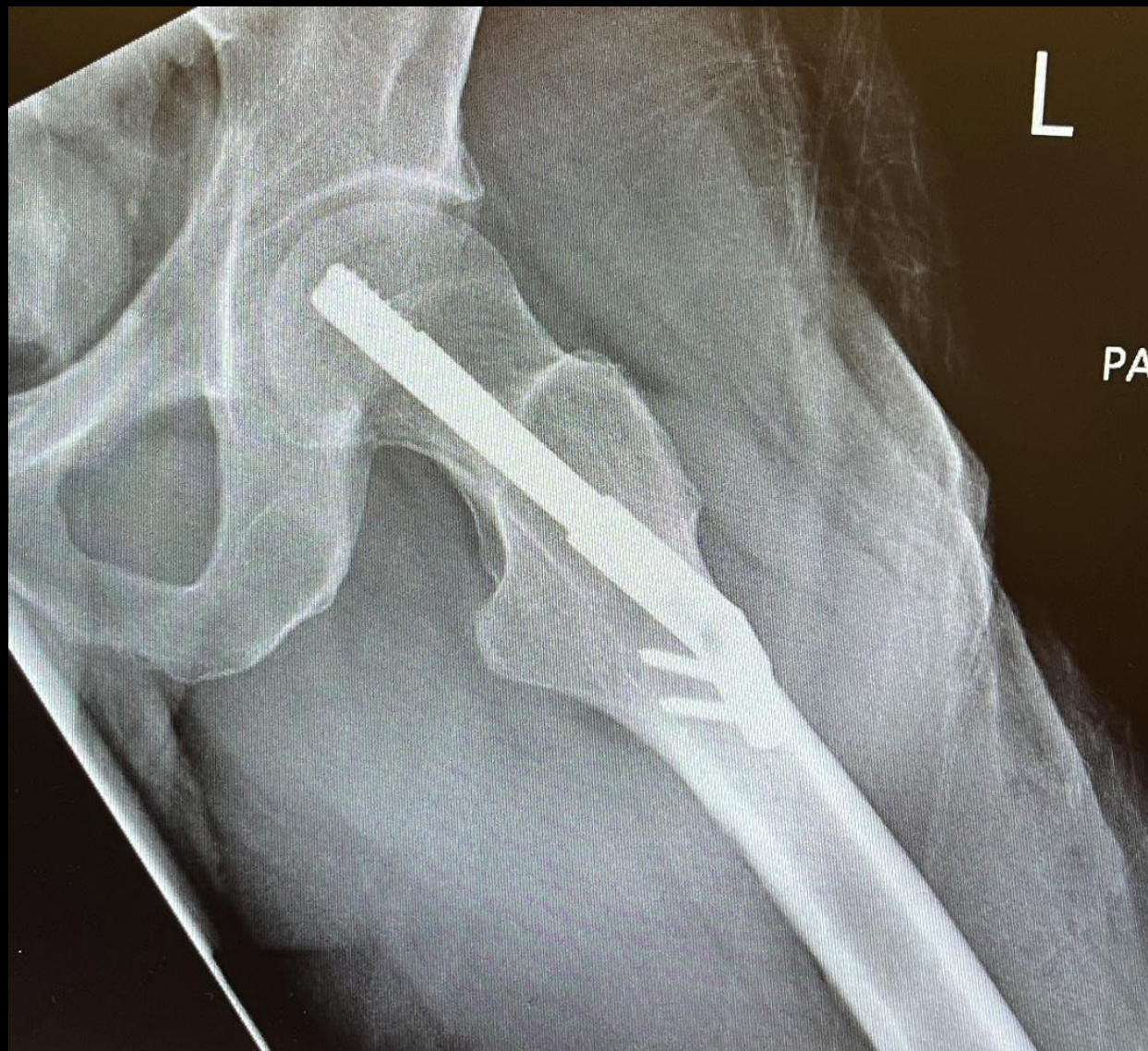
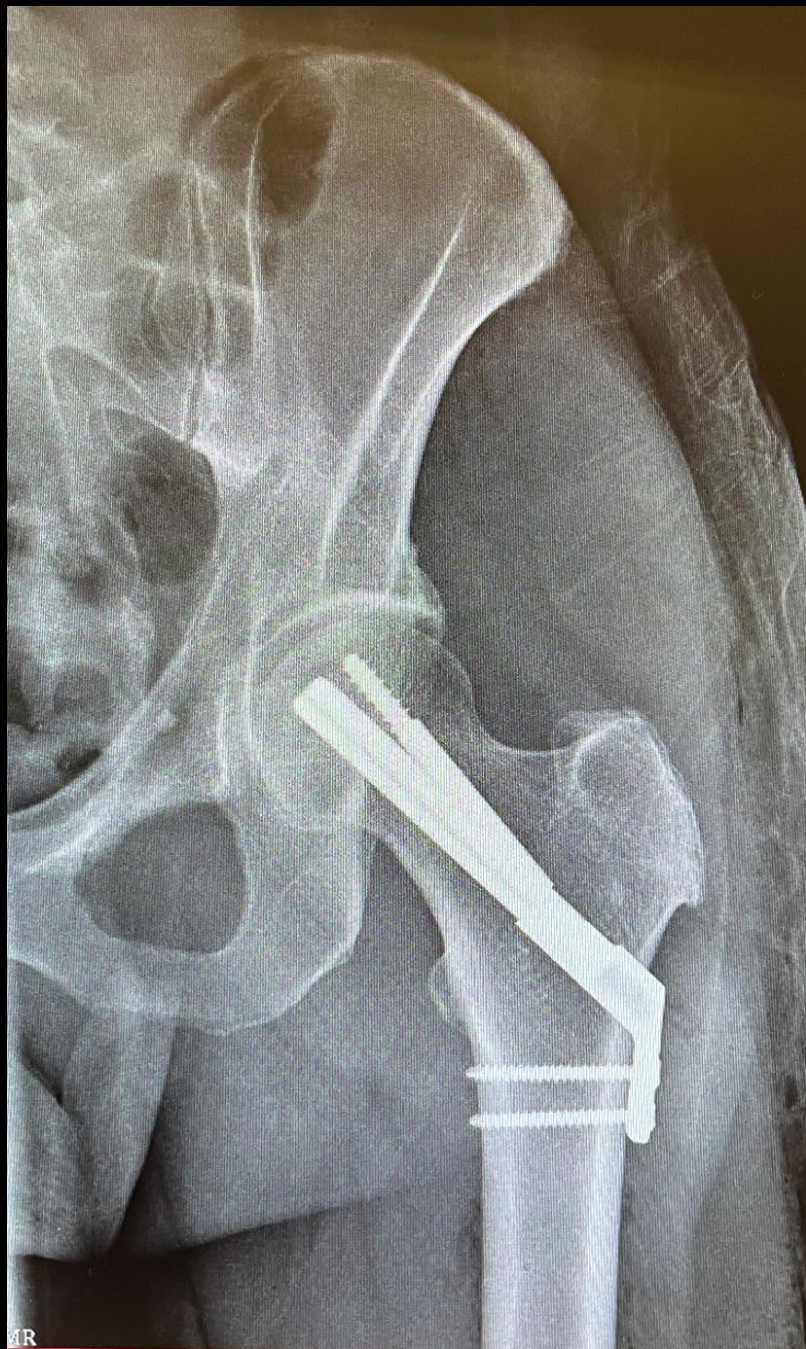
*Joseph T. Patterson, MD,\* Keisuke Ishii, MD,\* Paul Tornetta III, MD,†  
Ross K. Leighton, MD, FRCSC, FACS,‡ Darin M. Friess, MD,§ Clifford B. Jones, MD, FACS,||  
Ari Levine, MD,¶ Jeffrey J. Maclean, MD,\* Theodore Miclau III, MD,\* Brian H. Mullis, MD,\*\*  
William T. Obremskey, MD, MPH,†† Robert F. Ostrum, MD,‡‡ J. Spence Reid, MD,§§  
John A. Ruder, MD,||| Anas Saleh, MD,¶¶ Andrew H. Schmidt, MD,¶¶¶ David C. Teague, MD,\*\*\*  
Antonios Tsismenakis, MD,† Jerald R. Westberg, BA,¶¶¶ and Saam Morshed, MD, PhD\**

**Results:** Median follow-up was 1.5 years. One hundred six (45%) patients underwent open reduction. Reduction quality was not significantly affected by open versus closed approach (71% vs. 69% acceptable,  $P = 0.378$ ). The propensity to receive an open reduction was associated with study center; younger age; male sex; no history of injection drug use, osteoporosis, or cerebrovascular disease; transcervical fracture location; posterior fracture comminution; and surgery within 12 hours. A total of 35 (33%) versus 28 (22%) reoperations occurred after open versus closed reduction ( $P = 0.056$ ). Open reduction was associated with a 2.4-fold greater propensity-adjusted hazard of reoperation (95% confidence interval 1.3–4.4,  $P = 0.004$ ). A total of 35 (15%) patients underwent subsequent total hip arthroplasty or hemiarthroplasty.



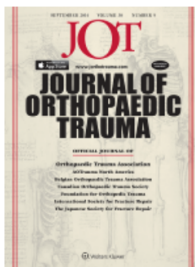
**Healthy 50yo M  
bike accident**

**IMPLANT?**



# Neck of femur fractures treated with the femoral neck system: outcomes of one hundred and two patients and literature review

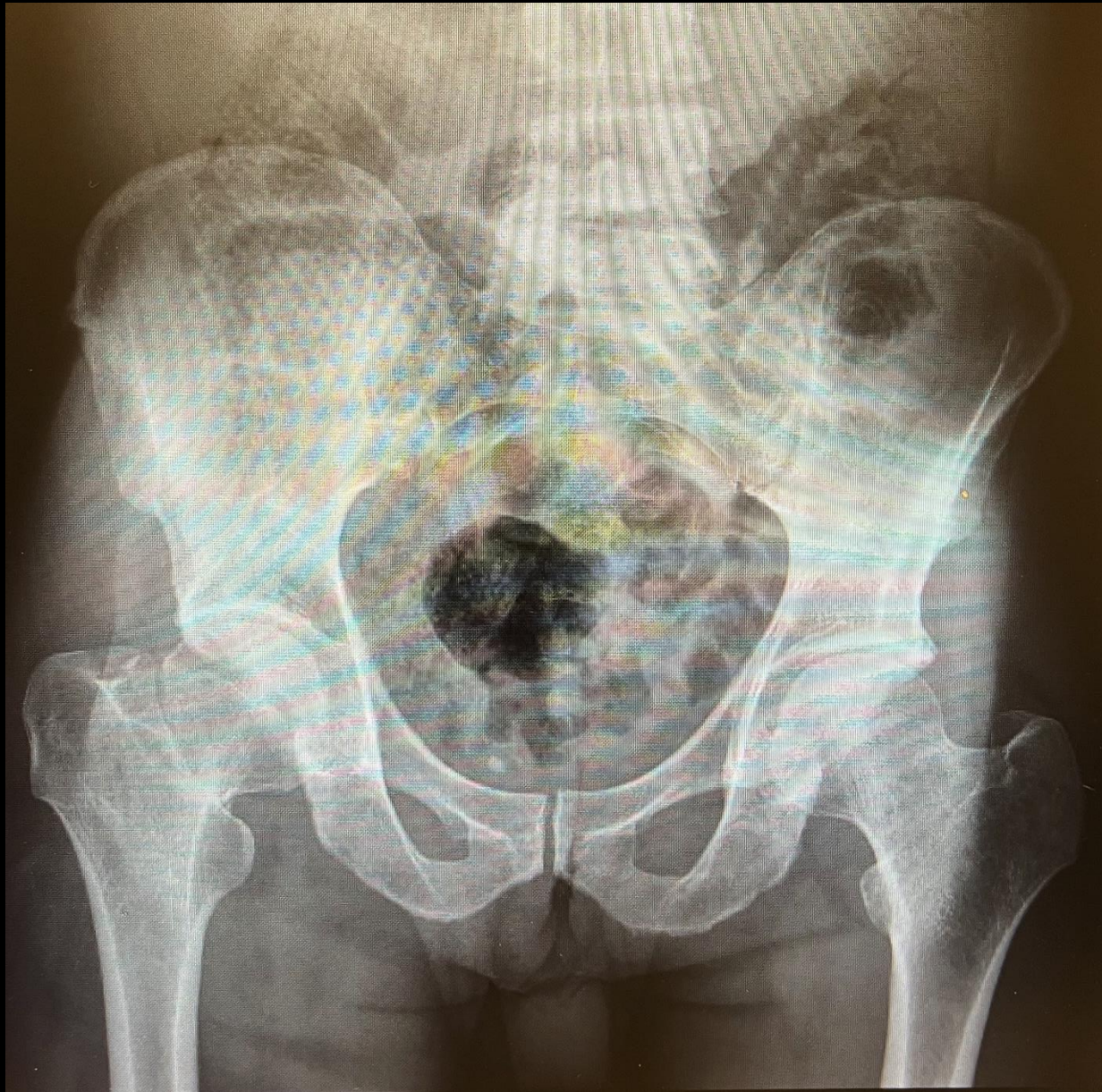
Amit Davidson<sup>1,3</sup> · Shlomo Blum<sup>3</sup> · Elad Harats<sup>3</sup> · Erick Kachko<sup>4</sup> · Ahmad Essa<sup>4</sup> · Ram Efraty<sup>4</sup> · Amos Peyser<sup>3</sup> · Peter V. Giannoudis<sup>1,2</sup>



Biomechanical Evaluation of the Femoral Neck System in Unstable Pauwels III Femoral Neck Fractures: A Comparison with the Dynamic Hip Screw and Cannulated Screws

A comparison between the femoral neck system and other implants for elderly patients with femoral neck fracture: A preliminary report of a newly developed implant

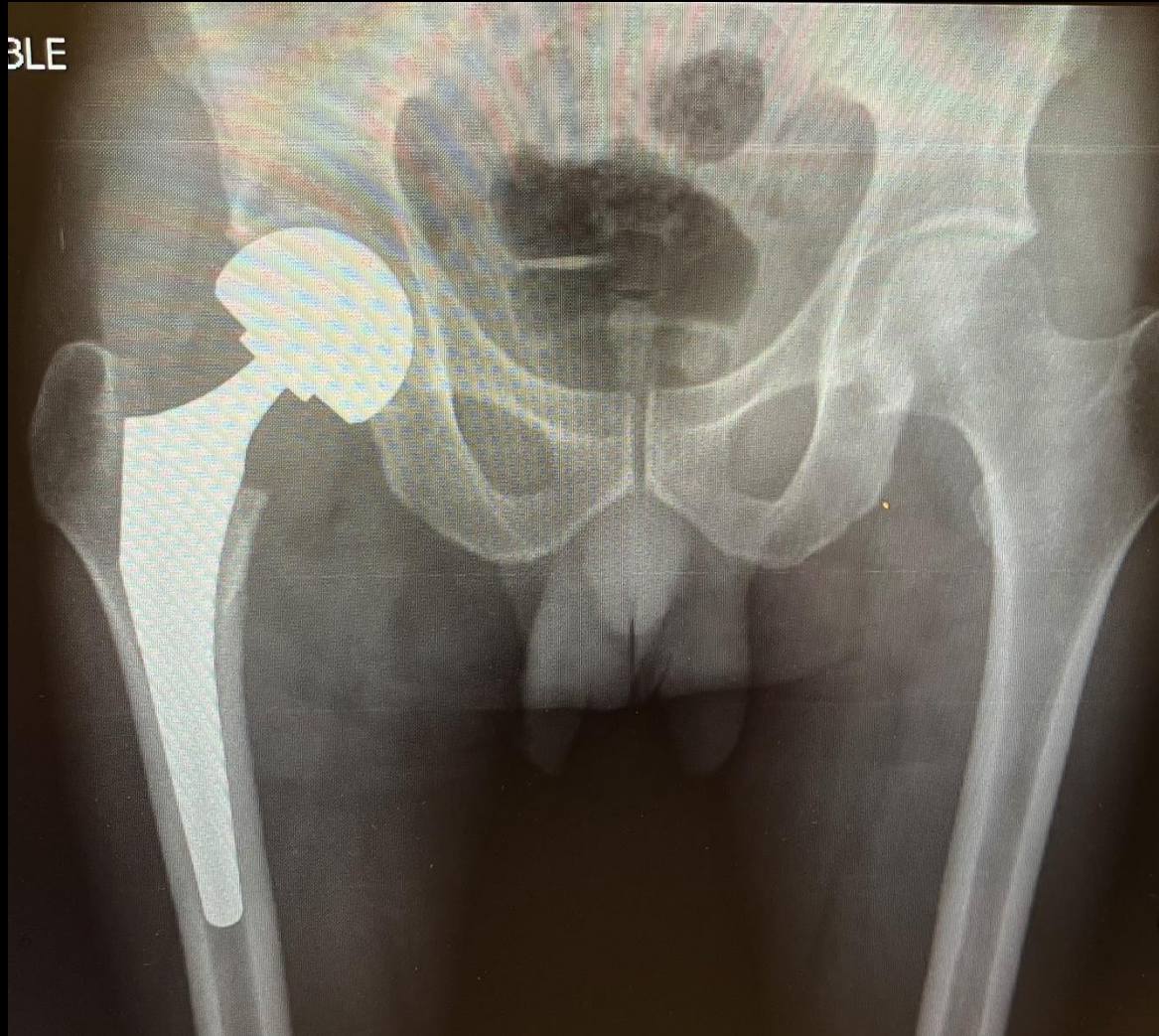
Yoshiya Nibe, Tomohiro Matsumura , Tsuneari Takahashi , Tatsuya Kubo, Yuta Matsumoto, Katsushi Takeshita

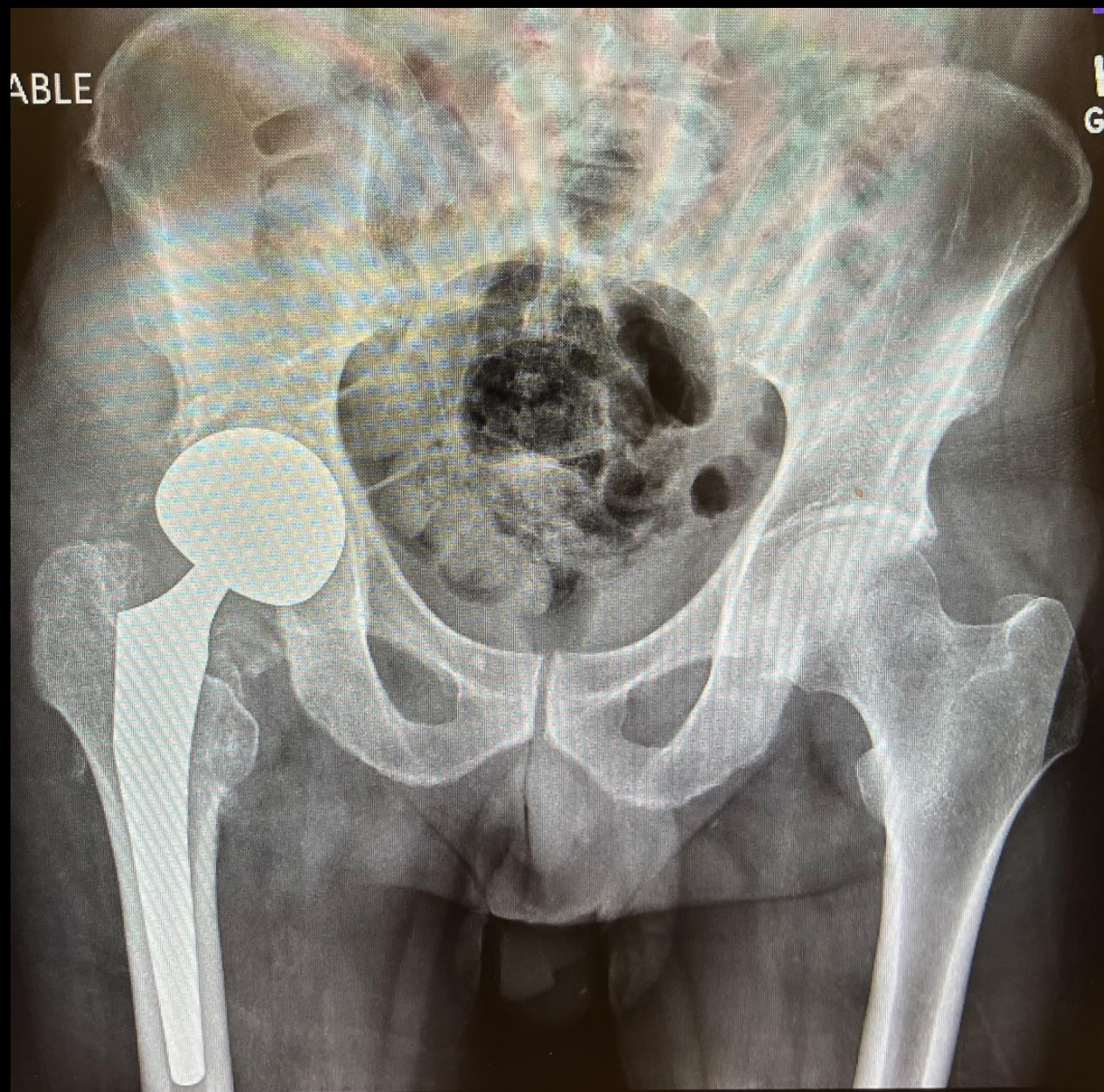


**50yo M**  
**Polysubstance**  
**Schizophrenia**

**Fix, replace, do  
nothing?**

BLE





**Now what?**



# Primary Hip and Knee Arthroplasty in a Safety Net Hospital: Substance Abuse and Other Factors Affecting Short-term Complications

Harry E. Jergesen, MD <sup>\*</sup>, Zachary P. Thielen, MD, Jay A. Roevers, AB, Toure T. Vashon, BS, Hao-Hua Wu, MD, Paul H. Yi, MD

*Results:* Adverse outcomes were more common in patients with higher rates of substance abuse, mental illness, and infection with human immunodeficiency virus (HIV) and hepatitis C virus (HCV). Substance abuse alone was not an independent risk factor for the occurrence of complications, but infections with HIV and HCV were. In the substance abuse subgroup, with its higher prevalence of risk factors, complications were more frequent (31.1% vs 16.4%,  $P = .0009$ ), and, in particular, deep infections (5.8% vs 1.8%,  $P = .0256$ ).



**Thank You**