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Poster Title: **Institutional Readiness Displayed through an Emerging Toxicology Issue: A Case Report of Suspected Xylazine Withdrawal and Subsequent Management**

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Case Report:

Xylazine is an alpha-2 adrenergic receptor agonist that induces respiratory depression via effects on smooth muscle receptors and sympathetic nerve terminals, similar to clonidine. Although not approved for human use by the FDA, xylazine is approved in veterinary medicine as a sedative, analgesic, and muscle relaxant. Over the past decade, xylazine has become increasingly prevalent as an adulterant within the illicit drug supply, utilized to enhance or mimic the effect of the illicit substance it is mixed with and increase bulk weight. In 2024, the Philadelphia Department of Health reported xylazine as the most common adulterant within the illicit fentanyl and heroin supply. Currently, there is an absence for xylazine detection in routine drug screening and toxicity is often overlooked or attributed solely to opioids. Often, the only indicator of xylazine use is the appearance of large and sometimes necrotic skin ulcerations across the body. Unfortunately, there is no specific xylazine antidote approved for human use, emphasizing the importance for institutional readiness in prompt xylazine toxicity or withdrawal management. We introduce the case of a patient who presented to the ED with symptoms consistent of xylazine use and possible withdrawal. The patient is a 38 year-old male weighing 76 kg with a past medical history significant for substance use disorder (SUD), hepatitis C, liver cirrhosis, and ascites. Upon initial presentation, his chief complaint was severe hip and scrotal pain, and multiple skin ulcerations across his body with no other suspected cause aside from xylazine use. The patient had an initial blood pressure of 129/79 mmHg and a pulse of 101 bpm. He received one-time doses of ceftriaxone 2 g IV and vancomycin 1 g IV, then transitioned to vancomycin 1.25 g IV every 8 hours and cefepime 1 g IV every 8 hours. On day 2, the patient had urine toxicology positive for fentanyl, a creatinine of 0.45 mg/dL, a WBC count of 10.5 cells/μL, and a lactate of 3.10 mmol/L. A pain control regimen and two sets of blood cultures were ordered with maintenance IV fluids. Wound care, urology, and ID consultations were placed regarding extensive skin ulcerations and epididymitis. Interventional radiology and orthopedic surgery were consulted for paracentesis and skin ulcerations across the left and right arm, right groin, and right buttock that appeared consistent with SUD. The adult inpatient methadone 72-hour withdrawal taper protocol was also initiated, including clonidine and lorazepam, with administration dependent upon clinical opiate withdrawal scale scoring. On day 4, the patient underwent a right orchiectomy and the abscess on his right arm was opened and drained. On day

5, the patient left against medical advice. He returned after day 6, febrile with urine toxicology positive for cocaine, amphetamines, and fentanyl. His WBC count was elevated at 17.3 cells/μL, and a chest x-ray revealed potential pneumonia. On day 7, antibiotics were resumed and blood cultures resulted in gram-positive cocci. Through days 8 and 9, hypertension and tachycardia persisted with MRI revealing myositis and intramuscular abscesses. Final blood cultures revealed methicillin-sensitive Staphylococcus aureus and antibiotics were switched to cefazolin 2 g IV every 8 hours for 42 days. On day 10, the patient received additional paracentesis and analgesia for pain control. Once stabilized on day 15, the patient was discharged to a subacute rehabilitation facility. As a result of this encounter, ED providers and pharmacists collaborated to produce xylazine toxicity and withdrawal guidance, which was approved by the pharmacy and therapeutics committee. This case demonstrates the importance of interdisciplinary collaboration in healthcare and the necessity for preparedness in facing the ever-changing nature of illicit drug use.