Long-Acting Injectable Buprenorphine: A Vein-Saving Victory in Pediatric Case

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Background

- Overdose deaths constitute the third leading cause of death in the pediatric patient population
- Only 1 in 54 adolescents received evidenced-based pharmacotherapy following an opioid overdose
- The majority of adolescents with severe substance use disorder (SUD) at age 18 will continue to have symptoms of SUD into adulthood
- Buprenorphine extended-release injections are not Food and Drug Administration-approved for pediatric patients, and the literature is even more limited in this patient population
- Our case utilized sublingual buprenorphine which was transitioned to long-acting injectable buprenorphine (LAIB) in a 15-year-old male with severe OUD

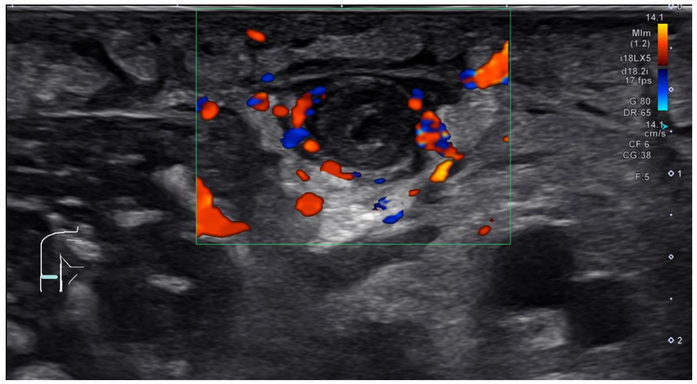

Figure 1. Hyperemic wall of the thrombosed cephalic vein indicating septic thrombophlebitis.

Pre-Hospital Course (12 months prior to initial admission)

- Outpatient evaluation and treatment for pediatric constipation (12 months)
- Unknown to family or healthcare providers at the time that constipation was related to chronic opioid use

Initial Hospital Admission

- Presentation to Emergency Department (ED)
- HPI: Constipation, urinary retention, 35-lb weight loss over 2 months
- Workup: Urine drug screen positive for fentanyl
- Patient reports history of opioid use to cope with traumatic loss of his step-mother
- Patient notes escalating use: Oral → intranasal opioids → progressed to IV fentanyl use
- Initial management:
  - Admitted to tertiary pediatric center (1.5 hours from home)
  - Treated for constipation
  - Started on sublingual buprenorphine
  - Discharged with local outpatient addiction medicine follow-up

Outpatient Follow-Up

- Continued IV fentanyl use
  - Discontinued buprenorphine due to fear of precipitated withdrawal
  - Patient noted fear of repercussions if he admitted return to fentanyl use
- Office presentation notable for tachycardia, febrile, intermittent chills on exam
- Inpatient labs reviewed: markedly elevated CRP & ESR
- Management:
  - Sent to ED for concern of sepsis, requested supervised re-initiation of buprenorphine
  - Local/Community hospital pediatric and adult medicine not comfortable with admission.
  - Continued symptoms during subsequent outpatient care; outpatient team reviewed with pediatric infectious disease at tertiary center

Second Hospital Admission & Diagnosis

- Direct admission to tertiary pediatric medical center with pediatric infectious disease
- Serial blood cultures: Polymicrobial bacteremia
  - *Enterococcus, Enterobacter, Pseudomonas putida, Stenotrophomonas maltophilia*
- Echocardiogram: No valvular vegetations
- Diagnosis: Septic thrombophlebitis (Figure 1)

Hospital Course & Management

- Treated with 6 weeks of IV antibiotics
- Reinitiated on buprenorphine, titrated to 8mg buprenorphine/naloxone daily
- Discharge Planning:
  - Coordinated care with tertiary inpatient service, outpatient clinic, & local addiction medicine teams
  - Transitioned to long-acting injectable buprenorphine (LAIB) with tertiary outpatient team
  - Received first LAIB dose (300 mg) on discharge day
  - Successful transition to follow-up appointments for LAIB with local addiction medicine
  - No further IV use, back in school 9 months after starting LAIB

Discussion

- This case represents additional data on the impact of LAIB on pediatric patients
- Adolescent medication compliance is often difficult, and a LAI option helps ensure the adolescent is getting the appropriate level of medication
- Patient and guardian consent aided in ownership of the decision and long -term commitment to treatment
- Adolescents represent a high-risk population where substance use disorder is undertreated and often is delayed in diagnosis
- This case underscores the clinical significance of long-term medication for opioid use disorder (MOUD) in pediatric patients, emphasizing the importance of ongoing support beyond initial stabilization
- As health care systems grow in both size and complexity, this case also illustrates the impact of effective communication across different settings to coordinate care for high-risk patients

Authors & Disclosures

- The authors have no relevant financial or non-financial conflicts of interest to disclose

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