

Introduction

This interesting case highlights important topics in pain management, including: fetal radiograph risk, gender-affirming care, and prevention of traumatic, complex neuraxial placements.

Case Study

A 34 year-old G2P1 37 weeks parturient with a past medical history of hypertension, anxiety, hyperalgesia, scoliosis repair, and masculine features from previous cross-sex hormone therapy (CSHT) for female-to-male transition presents for induction due to elevated blood pressure in the setting of no prenatal care.

Upon presentation, this patient identifies as a woman. Her CSHT was discontinued prior to conception and, unfortunately, complex psychosocial factors prevented routine medical care.

On pre-anesthetic evaluation, the patient expressed a history of traumatic neuraxial anesthesia for her first vaginal delivery in the context of an expedited delivery and absence of prenatal care. Her remote scoliosis repair caused surgical scarring from sacrum to high thoracic spine, leading to traumatic single shot spinal(s), or inadvertent dural tap(s) with attempted epidural placement.

Expedited anesthetic preparations included bedside ultrasound to identify inferior lumbar laminae as a potential neuraxial window. Scar tissue prevented further evaluation. To assess previous surgical hardware, the patient was amenable to obtain 1 anterior-posterior X-ray after discussing radiation risks.

On X-Ray, patent L5-S1 interspace was noted, posterior fusion of thoracolumbar spine was partially seen with inferior screws at L1, and iliac crest was seen appropriately at L2. Ultrasound-guided epidural was placed in one attempt at L5-S1. The patient delivered without complications and had favorable appreciation of the experience.

Discussion

Ultrasound guidance and a single radiograph allowed for single attempt neuraxial anesthesia and improved this patient's satisfaction after previous difficult neuraxial anesthesia despite several risk factors

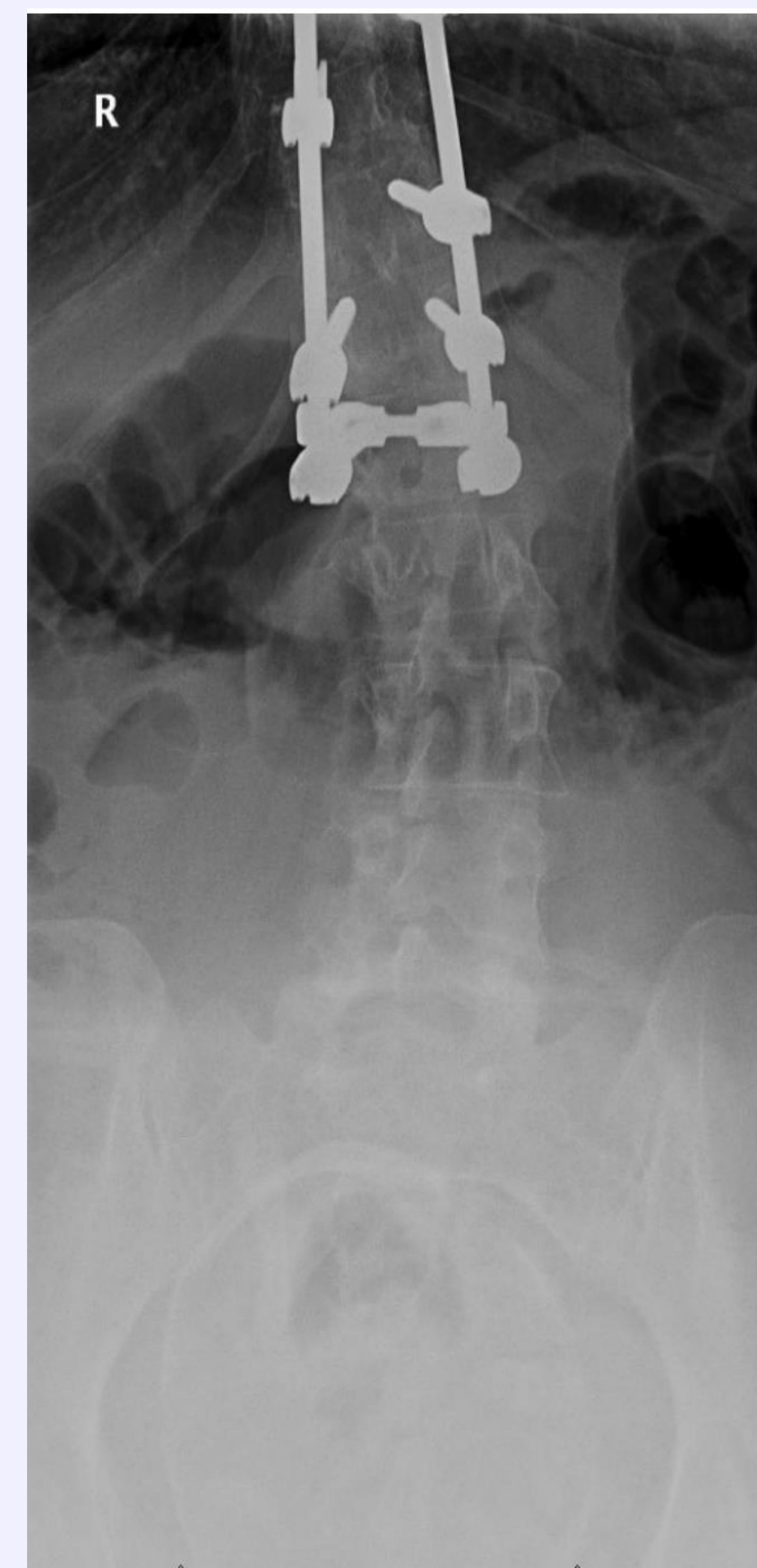


Figure A: PA X-ray of patient's hardware from previous scoliosis surgery

Research shows that a single plain radiograph does not contribute a significant radiation dose to the fetus, ranging from 0.001 mGy to 10mGy depending on the type of study. An L-spine radiograph, specifically, contributes 10 mGy. The threshold limit of safe radiation exposure in parturients is 50 mGy: equivalent to one CT pelvis. Although one plain film is considered safe, it is imperative for the provider to consider cumulative radiation from multiple films, posterior-anterior vs. anterior-posterior projection, and optimal positioning to reduce fetal risk. In-utero radiation exposure risks include: organ, intellectual disability, and prenatal death.



Figure B: Utilization of ultrasound for laboring epidural placement



With over 1 million people identifying as transgender in the USA (1 in every 250) as of 2021, in-depth knowledge of CSHT and how these interventions may alter anatomy is imperative for physicians to contribute to thorough, compassionate care.

Testosterone can be aromatized to oestradiol, which theoretically increases clotting risk for venous thromboembolism, pulmonary embolism, myocardial infarction, and stroke. Furthermore, total body fat decreases in transgender males during CSHT, which may cause drug metabolism variation from liver dysfunction secondary to testosterone therapy – all important considerations when identifying candidacy for neuraxial anesthesia.

Finally, complex patients needing neuraxial analgesia can be challenging. For this particular patient, identifying predictors of difficult placement, early use of ultrasound, and appropriate patient-physician interview mitigated multiple traumatic attempts to better facilitate a positive epidural experience for the patient. Unfortunately, this patient presented to the Emergency Department one-month post-partum with depression, anxiety, and forearm lacerations after an alcohol-induced episode. The need for aggressive psychiatric screening and continuous support is evident in the peripartum period and beyond.

References

1. Yoon, I. et al. "Radiation Exposure in Pregnancy". May 1 2023. <https://www.ncbi.nlm.nih.gov/books/NBK551690/>
2. Tollinche, Luis. Et al. "Perioperative considerations for person-centered gender affirming surgery." Advanced Aenesthesiology. 2021, Dec; 39: 77-96. <https://pubmed.ncbi.nlm.nih.gov/3471598>
3. Mishra, et al. "Gender reassignment surgery – a narrative overview of anaesthetic considerations and implications." Anaesthesiology Intensive Therapies. 2021 Oct; 53(4): 343-349. 2021 Oct 29. <https://pubmed.ncbi.nlm.nih.gov/34714015/>