

Introduction

- Spinal **needle fracture** during spinal anesthesia is a rare but serious complication, with multifactorial causes related to technique, needle characteristics, and patient factors.
- This abstract presents a case involving a 35-year-old pregnant woman undergoing an emergency cesarean section (CS) with subsequent spinal needle fracture, emphasizing the importance of identifying predictive factors and proper management.

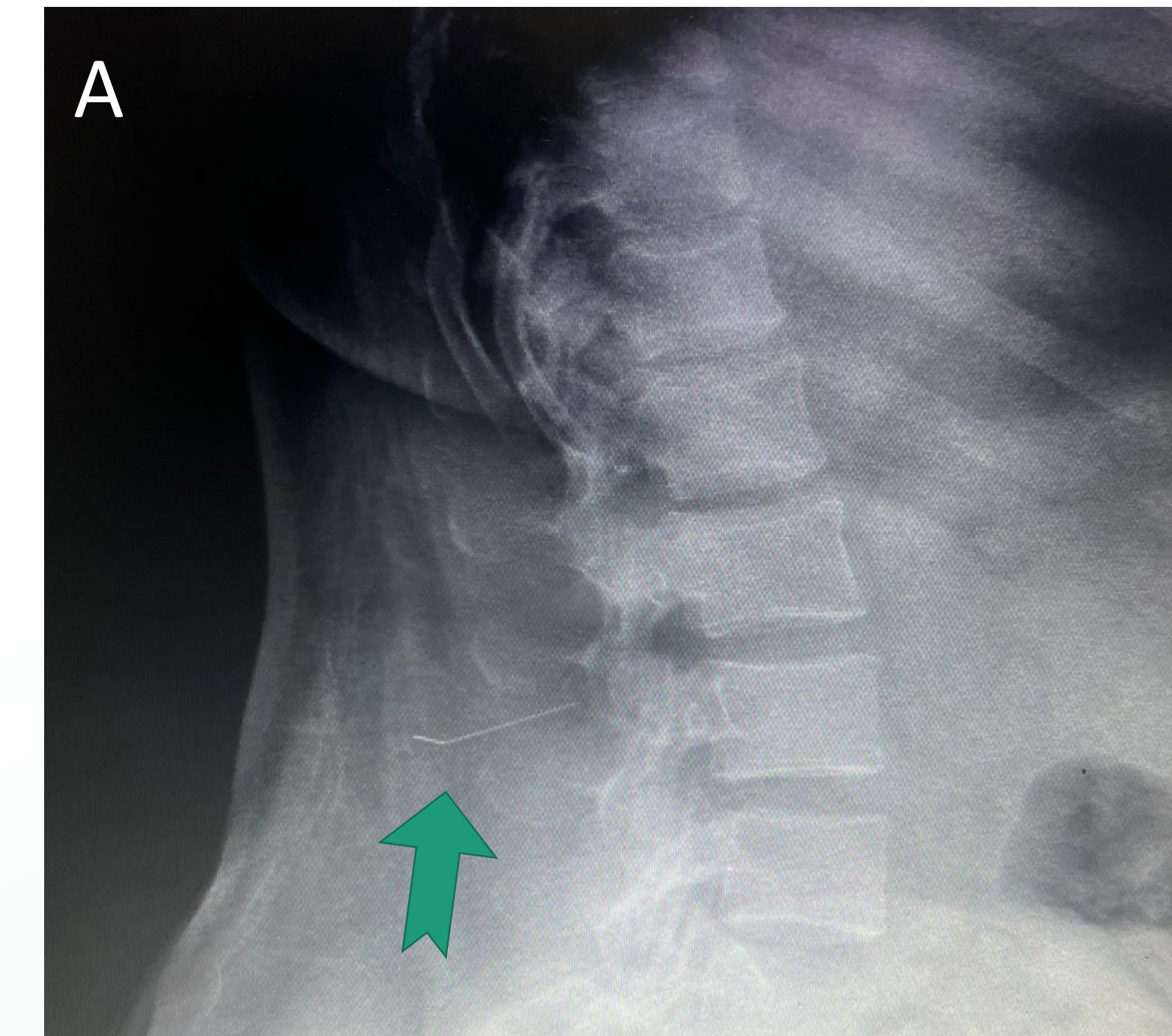
Case summary

A 35-year-old gravida 4, para 1+1+1+2, at 35 weeks gestation, **BMI 31** kg/m², presented for an **emergency CS** due to premature rupture of membrane.

- Initial attempts using a 90-mm, 25-gauge pencil-point needle through a 20-gauge introducer were challenging.
- **First attempt** of spinal needle insertion at median approach was unsuccessful; a **second attempt** was done at **paramedian** approach with cerebrospinal fluid (CSF) backflow was followed after needle repositioning.
- While removing the needle it was severed through the introducer, which was **not mobilized**. The stylet was not broken because it had been removed just after the needle insertion.
- The severed part of the needle remained in an undetermined location with **approximately 4 cm length**.
- An emergency decision led to CS under general anesthesia.
- Post-CS, a neurosurgeon extracted the broken needle on the first postoperative day.

Discussion

- The use of a **smaller caliber** needle (pencil point) increase the risk of difficult puncture is, with needle bending and difficulty to ascertain an adequate direction of the needle, especially in **obese patients**.
- BMI seems weakly related to neuraxial block difficulty; however, landmarks and body habitus may have some association. Yet, **optimal positioning** of the patient helps minimizing the difficulty of neuroaxial block.
- Introducers have been designed to assist with the placement of spinal needles into the subarachnoid space due to the difficulty in directing needles of small bore through the tissues .
- **To reduce this risk**, it is advisable not to continue the puncture if there is resistance to flow, not to withdraw the needle or to change its direction through the introducer without mobilizing it.
- Spinal anesthesia may remain the first line option in **the absence of contraindication**.
- The risk of neurological complications depends on the position of the needle, particularly if the needle is located near the spinal canal or is migrating towards it.
- Broken fragments of a spinal needle should be removed **as soon as possible** to prevent severe symptoms or complications.
- The recognition of predictive factors for difficult neuraxial anesthesia, the use of **ultrasound** in obese patients, and a properly executed technique may have allowed avoiding this complication.



The arrows in both fig A & B shows the broken part of the needle.

Conclusion

- The use of a non-mobilized introducer likely led to needle deformation and subsequent fracture.
- To mitigate risk, practitioners should avoid needle manipulation without introducer mobilization, especially in the presence of resistance.
- Timely removal of the broken needle is crucial to prevent complications.
- This case underscores the need for vigilance in technique execution, consideration of predictive factors, and the potential utility of ultrasound guidance in challenging scenarios.

References

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2. Practice Guidelines for Obstetric Anesthesia: an updated report by the American Society of Anesthesiologists Task Force on Obstetric Anesthesia and the Society for Obstetric Anesthesia and Perinatology. *Anesthesiology*. 2016;124(2):270–300