



A Rare Catastrophic Complication Of Spinal Anesthesia: A Case Report

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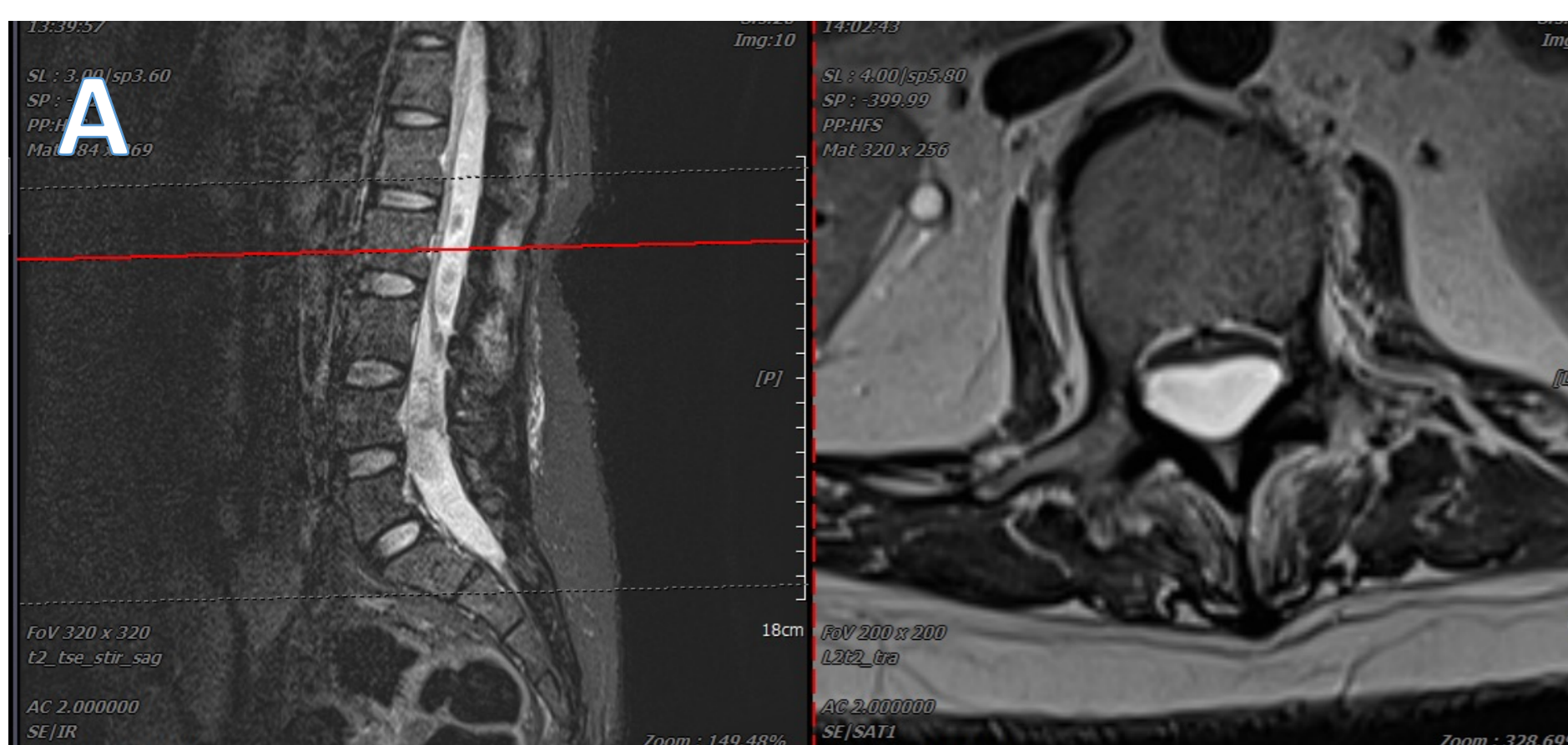


Background

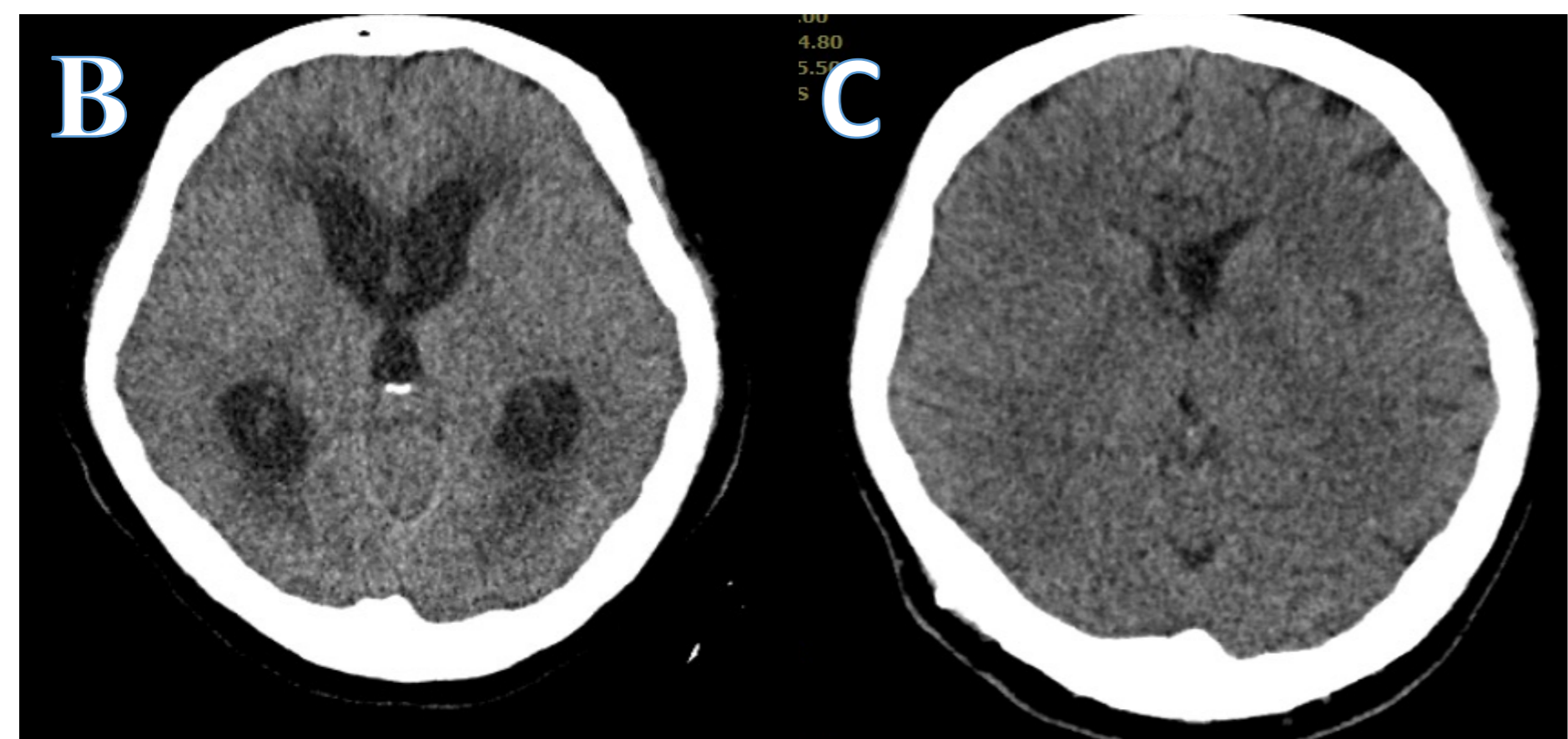
- To our knowledge, the **association between hydrocephalus and postoperative spinal adhesive arachnoiditis is very rare.**
- Here we describe an unusual case of a 38-year-old woman with **adhesive spinal arachnoiditis who developed hydrocephalus after obstetric spinal anaesthesia.**
- No other precipitating cause** could be identified.
- In the absence of more conclusive data, central neuraxial anaesthesia practitioners can only continue to ensure a diligent, aseptic, and atraumatic technique and avoid all potential sources of contamination.
- It seems important to discuss the possibility of permanent neurological deficit with patients while taking informed consent.

Case Presentation

- A **38-year-old woman** with underlying endometrioid carcinoma underwent spinal anaesthesia for total abdominal hysterectomy, bilateral salpingo-oophorectomy, and bilateral pelvic lymph node dissection.
- The **operation was uneventful** and no intraoperative analgesics or other medications were required.
- Immediately after the operation**, the patient complained of severe **burning pain and weakness over her bilateral legs.**
- MRI spine (A)** showed diffused dural lining enhancement with clumping and thickening of nerve roots, attached to the anterior thecal sac at the L2/3 level.



- 2 weeks later**, the patient complained of headache and nausea with blurred vision. **Brain CT (B)** showed **acute communicating hydrocephalus.**
- Emergency right **ventriculoperitoneal shunt** was inserted. Brain CT **(C)** showed acute communicating hydrocephalus resolved.
- MRI brain** did not show any focal enhancing brain lesion or abnormal leptomeningeal enhancement.



- The patient **continued to suffer from paraesthesia and paraparesis in her lower extremities, urinary retention** requiring continuous bladder drainage, and **constipation** requiring regular enema.
- Her lower extremity **motor function showed no significant recovery** even after months of rehabilitation.
- She was wheelchair-bound and needed help with her activities of daily living.
- After a year of follow-up, her condition remained the same. She was alert and confined to a wheelchair.

Discussion

- The peculiarity of the case is the development of **hydrocephalus after postoperative spinal adhesive arachnoiditis.**
- Adhesive arachnoiditis results in **intrathecal scarring that can impede subarachnoid CSF pathways, disrupting blood supply and tethering neural elements**, leading to atrophy¹.
- The temporal association between neuraxial anesthesia and the development of adhesive arachnoiditis remains speculative and controversial².
- These include an **inflammatory response to blood in the subarachnoid space, the action of the local anesthetics themselves, and accidental contamination of the injectate.**
- CSF contamination could result in increased intrathecal collagen synthesis and subsequent fibroproliferative response and arachnoiditis³.
- In this way, **spinal CSF reabsorption can be impaired.**
- Hydrocephalus could also result from a reduction in spinal compliance due to an obstruction.**
- Prevent measures** are advisable to avoid contamination, such as avoiding accumulation of chlorhexidine on the skin and allowing the skin to dry completely before proceeding.
- Chlorhexidine swabsticks, wrappers, or containers should be placed as far away as possible from opened or unopened needles and syringes, ideally on a **separate tray.**
- Opened impregnated swabsticks or jars of detergent should **not be passed over the sterile tray** to prevent dripping.
- Some authors advocate **decompressive laminectomy and careful microsurgical lysis of the nerve root**, but results generally remain poor¹. In this case, the spinal nerve roots adhesion was treated **conservatively.**
- Earlier steroid therapy** can certainly achieve better results, but depends on practitioners who recognize adhesive arachnoiditis in its often unclear early stage and safely differentiate it from more frequent, especially infectious complications of spinal anesthesia¹.

Conclusion

- Progressive ascending weakness and loss of sensation associated with spinal anaesthesia procedures should alert clinicians to the possibility of spinal adhesive arachnoiditis.
- Spinal or epidural anaesthesia practitioners are encouraged to discuss this highly disabling but fortunately rare complication as part of the process of obtaining informed consent.
- Practitioners must try to avoid contamination of the injectate, including removing any source of chlorhexidine or alcohol and avoid dripping, splashing, passing impregnated swabs or disinfectant containers across the sterile field.

References

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