A Possible Cause of Unexplained Dural Puncture Headache

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INTRODUCTION

- During advancement of the epidural needle, the dura may be inadvertently punctured about 1.5% of the time[1].
- Following dural puncture, about 76-85% of the time, parturients develop post-dural puncture headache[2].
- In our practice, we noticed several occasions that patients developed post-dural puncture headache without evidence of dural puncture.
- In this case, we suspect that we can explain its cause and suggest how to reduce its incidence.

CASE REPORT

- A 36-year-old lady G3P2 (Ht: 5'6'', Wgt: 162 lbs) requested epidural anesthesia for repeat elective cesarean section (C/S).
- After prehydration with 1500 mL of Lactated Ringer's solution, the parturient was placed in the left lateral position and prepared for lumbar epidural anesthesia.
- Following subcutaneous local anesthetic administration, an initial attempt to identify the epidural space was made in the midline of the L3-4 interspace using a 17 g Tuohy needle and the loss-of-resistance to air technique.
- Even though a sudden "give" was felt, no loss of resistance to air injection was followed.
- The needle was further advanced to 9 cm from the skin at several directions without success in establishing loss-of-resistance to air injection.
- Therefore, the needle was completely withdrawn and the stylet was reinserted when a blood clot of about 5 cm long was pushed out of the Tuohy needle.
- Several further attempts to identify the epidural space at the same interspace failed and general anesthesia was administered.
- The parturient underwent an uneventful C/S.

CASE REPORT

- Twenty-four hours later, she complained of a frontal headache with neck stiffness which was exacerbated by sitting position and relieved when she returned to supine position.
- A successful blood patch was performed using 20 mL autologous blood administered into the epidural space which was 5cm from the skin.
- She was discharged home 3 days later following an uneventful post-op course.

DISCUSSION

- The increase in tissue blood flow during pregnancy as well as sympathetic blockade from a field block, may facilitate the piercing of a subcutaneous blood vessel before the Tuohy needle enters the epidural space.
- Constant pressure on the plunger while advancing the Tuohy needle toward the epidural space may have prevented the blood in the needle from emerging out into the glass syringe and becoming visible.
- We have noticed in several cases that if the epidural space is not identified immediately this blood may clot and occlude the lumen of the epidural needle.
- When a "give" is felt while the needle is inserted without achieving loss-of-resistance to air injection, the stylet must be reinserted before further advancement of the needle.
- This phenomenon may explain our observation that this parturient developed unexplained post-dural puncture headache following an "uneventful" epidural technique.
- In conclusion, reinsertion of the stylet during advancement of the epidural needle can reduce the incidence of unexplained post-dural puncture headache.

REFERENCES

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