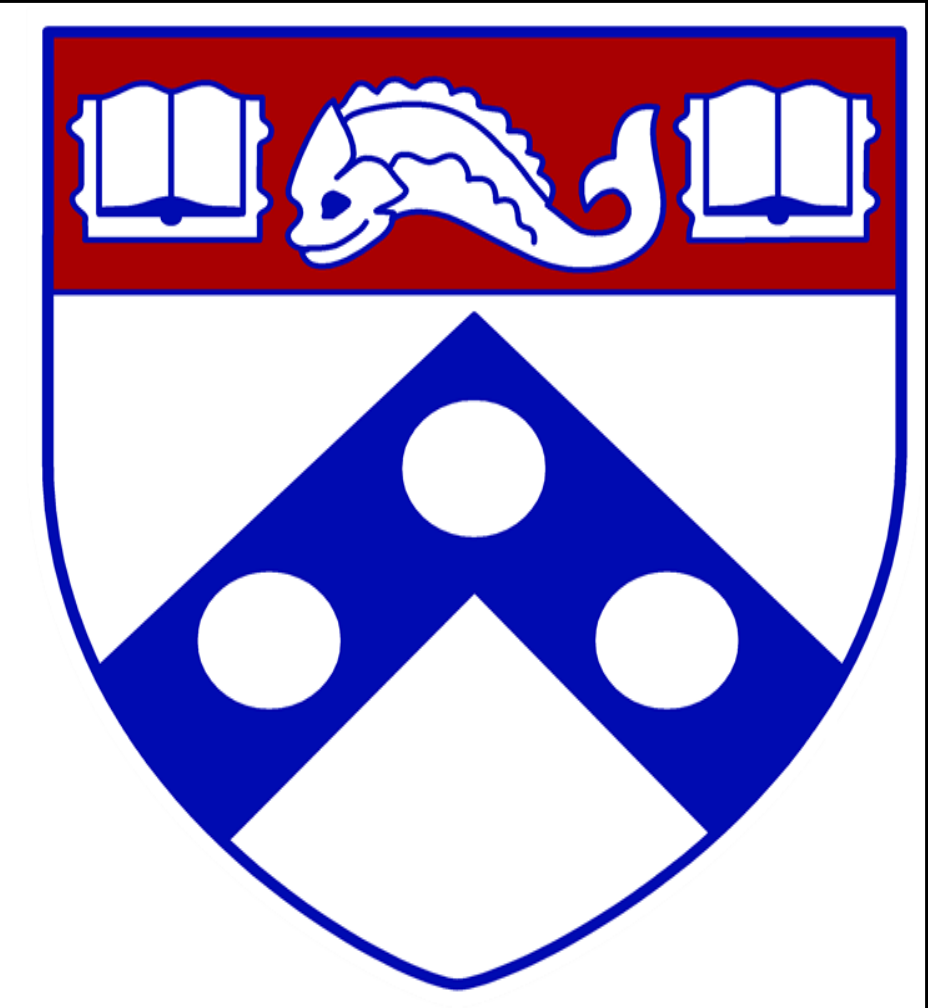


A Novel Device for Intrathecal Labor Analgesia: A Case Series



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Abstract

Continuous intrathecal analgesia for labor provides rapid, reliable analgesia, superior flexibility in medication dosing and drug choice, and rapid conversion from labor analgesia to surgical anesthesia.^{1,2} Since the withdrawal of microcatheters from the U.S. market in 1992, the only method for administering continuous intrathecal analgesia has been via a large-bore epidural catheter.¹

The Wiley Spinal (Epimed; Johnstown, NY) is an intrathecal delivery device consisting of a 23-gauge end-orifice Coude tipped cannula over a 27-gauge pencil-point needle. It is introduced, after identifying the epidural space via loss-of-resistance technique, through a peel-away plastic introducer. The cannula is inserted into the subarachnoid space in much the same way as an intravenous cannula, and then is connected to infusion tubing at the skin via an integrated connector. It is FDA-approved for intermittent intrathecal medication administration for regional anesthesia.

There has been limited experience with the use of the Wiley Spinal for labor analgesia. We describe our experience with this device for both labor analgesia and surgical anesthesia for Cesarean delivery.

The Device



Product Components:

- A: 27-gauge pencil-point spinal needle
- B: 23-gauge wire-wound end-orifice cannula
- C: Peel-away Tuohy introducer
- D: Standard 19-gauge Tuohy needle
- E: Connection tubing with integral Wik-wire to maintain catheter patency
- F: Hub support pad
- G: Standard Loss of Resistance Syringe

Patient Data

Gravidity, Parity, and Gestational Age	Indication(s)	Comorbid Conditions	Level and Method of Insertion	Paresthesias?	Functional for Procedure(s)?	Length of time in situ?	Complications
G2P1001 39 1/7 weeks	Elective Repeat Cesarean Delivery	Morbid obesity (BMI 41)	L3/4 R. Paramedian LOR to Saline	None	Yes	Two hours	None
G2P0010 38 weeks	Induction of Labor → C/S for fetal intolerance of labor	Gestational Hypertension	L3/4 R. Paramedian LOR to Saline	Mild, Transient	Yes for Labor and C/S	18 hours	None
G2P0010 41 weeks	Induction of Labor	Post-dates gestation, Conception by IVF	L4/5 R. Paramedian LOR to Saline	None	Yes	6 hours	None
G1P0 39 4/7 weeks	Induction of Labor → C/S for failure to progress	Maternal L-TGA → Systemic RV RV dysfunction (EF 35%)	L3/4 R. Paramedian LOR to Saline	None	Yes for Labor and C/S	22 hours	None
G3P2002 39 weeks	Elective Repeat Cesarean Delivery	Morbid Obesity (BMI 45)	L3/4 R. Paramedian LOR to Saline	None	No. No CSF flow in catheter after easy placement	30 min	Catheter nonfunction. None postoperatively.
G4P3003 39 weeks	Elective Repeat Cesarean Delivery	Gestational Hypertension, Obesity (BMI 38)	L3/4 R. Paramedian LOR to Saline	Severe, Transient	No. No CSF flow after pt. positioning	30 min	Catheter nonfunction. None postoperatively.
G4P3003 39 1/7 weeks	Elective Repeat Cesarean Delivery	Hypothyroidism, Hepatitis C	L3/4 Midline LOR to Saline	Severe, Transient	No. Maximal obtainable level T8	60 min	Inadequate sensory level for procedure. None postoperatively

Discussion

We describe our experience with seven parturients administering labor analgesia with the Wiley Spinal, a novel device for continuous intrathecal administration of analgesics. Our series includes four successful anesthetics (one successful vaginal delivery, two failed labor inductions with successful use for Cesarean delivery, and one for elective repeat Cesarean), and three failed anesthetics (all for elective repeat Cesarean delivery).

In all four successful uses, analgesia was rapid in onset and easily titratable. All four patients rated themselves “extremely satisfied” (five out of a five-point scale) with their anesthetic and each said they would choose the same anesthetic again and would recommend it to others.

Obesity likely played a role in two of the three failed anesthetics. Both patients had loss of resistance at 8 cm (the maximum length of the provided Tuohy) and, therefore, had less than 2 cm of cannula in the subarachnoid space. A longer cannula, with a longer accompanying Tuohy, would likely rectify this type of issue, and is currently in production. A third failure involved inability to maintain an adequate level of anesthesia for Cesarean delivery; the cause of this is unknown, though it could be due to catheter malposition (i.e. positioning of the catheter tip caudally, rather than rostrally, from the insertion point).

Complications, other than anesthetic failure, were not clinically significant. Three of the seven patients complained of paresthesias (two severe), though these were transient and did not lead to postoperative neurologic complaints. None of the seven patients complained of postdural puncture headache symptoms.

References

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- Palmer, CM. Continuous Spinal Anesthesia and Analgesia in Obstetrics. *Anesthesia and Analgesia*. 2010; 111(6):1476-79

Disclosures

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