Cesarean hysterectomy and spinal catheter: when single shot spinal is not the best option.

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Introduction

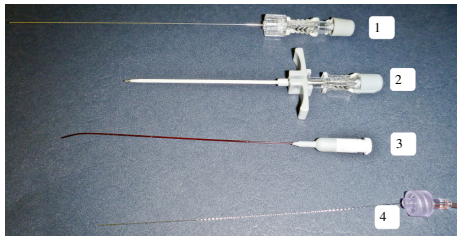
Use of intrathecal catheter is not new to anesthetic practice. It dates back to 1944, when Edward B Tuohy was advocating its use with modification of hypodermic needle (now widely referred as Tuohy needle) for placement of intrathecal catheters.[1,2] Since then its popularity was up and down.

But recent trend in increase of repeated cesarean sections and complications associated with them, makes continuous spinal catheters an interesting option in obstetric anesthesiology arsenal. Continuous spinal catheter combines the benefits of deep neuraxial block of spinal anesthesia with the possibility of re-dosing and maintenance of that block, Continuous spinal techniques have mostly previously performed with an epidural macro catheter. This technique is easy to perform and provides all the benefits of continuous spinal block, but may have a potentially increased PDPH risk due to a large diameter of needle/catheter used. Recent introduction of smaller spinal micro catheters e.g. the "Wiley Spinal™ is promising same benefits of continuous spinal anesthesia without side effects associated with macro catheters.

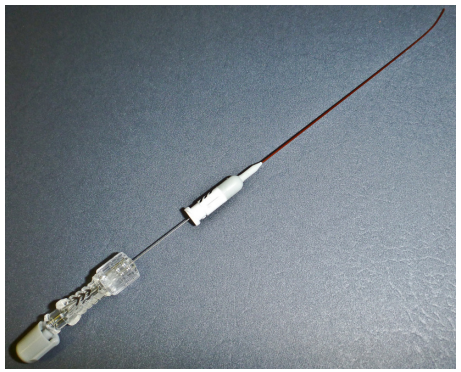
Materials and Methods

We report that a case of placenta accreta, performed at our institution with continuous spinal technique. 37 week G3P1 parturient with history of endometrial ablations, diagnosed with a posterior marginal placenta previa with a reported risk of placenta accreta. The spinal catheter was placed without issue (23G, catheter over needle method), patient reported no paresthesia, no blood was aspirated and there was an easy flow of CSF obtained. Total dose of 5ml of 0.25% isobaric bupivacaine was administered in incremental boluses of 1-2 ml to achieve a level of surgical anesthesia (T6) and cesarean section was performed. Slow incremental installation of block provided hemodynamic parameter stability during onset and duration of the spinal anesthesia.

After delivery of healthy baby, a placenta accreta was diagnosed by the obstetric team and a cesarean hysterectomy was performed. Estimated blood loss of 1400 ml treated with 1 unit of packed red cells transfused to the patient intra-operatively along with 3 L of crystalloids.



1 - 27G 4" spinal needle with stylet.
2 - 17 G Tuohy needle with peel-away inroducer.
3 - 23G 3.5" over the needle spinal catheter with braided wires and preformed curve.
4 – 36" Extension Set with integrated Wik-Wire™.



Use of vasopressor drugs was not required during the case with patient maintaining blood pressures between 120-140/60-80 mmHg and heart rate of 60-90 bpm with 2 short episodes of 100 bpm, which resolved without the need for further intervention spontaneously. Patient was followed by our team and presented no complications in postoperative period, was very satisfied with comfort level that spinal anesthesia provided.

Conclusions

There have been case series reported of the use of the Wiley Spinal™ catheter in labor, but none to date for use in a case of cesarean hysterectomy. When we consider it as alternative to Epidural or to Combined spinal epidural techniques obvious advantages are controlled and quick onset with possibility of repeat doses and decreased sympatectomy phenomenon, probably related in part to isobaric bupivacaine solution. On the practical side, there is a learning curve when using any new technique, which is true for the Wiley Spinal™ catheter, with its 23G catheter over 27G needle method. It is introduced through a plastic peel-away introducer, placed over a specially designed 18G Tuohy needle. The needle is removed after finding epidural space with a standard loss of resistance technique. Expertise in using this technique requires more effort and learning curve is steeper compared to traditional techniques. While there are no detailed reports to date in assessment of the incidence of technical difficulty, postural puncture headache or paresthesia with this technique, there is case report describing this challenge with a single report of transient paresthesia[3], but with a smaller dural puncture one would expect a lower incidence of post operative issues.

References

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3. Tao W, Nguyen AP, Ogunnaike BO, Craig MG: Use of 23-gauge continuous spinal catheter for labor analgesia: A case series. Int J Obstet Anesth 2011;20:351-354.