Improving safety in the management of labour analgesia with intrathecal catheter after accidental dural puncture

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INTRODUCTION

Accidental dural puncture (ADP) is a recognised complication of epidural insertion.
An epidural catheter may be passed via the tuohy needle and used as an intrathecal catheter (ITC) to provide analgesia and avoid further attempts at epidural insertion.
ITC may also minimise post dural puncture headache if left insitu for at least 24 hours[1].
However, most trainees are not confident about ITC insertion, unsure of drug doses for top ups and concerned regarding complications.
Our unit has over 5000 deliveries yearly. CT2 to St7 Trainees rotate every 3 months. Accidental dural puncture is inevitable ~ 1.4% ADP per annum.
We aimed to improve education, knowledge, and safety of managing ITC for labour analgesia.

METHODS

Guidance on managing ADP and provision of analgesia with ITC is part of trainee induction information for our unit.
Education and work based assessments are used to improve knowledge and management for trainees and midwives.
To improve safety further:

- We sourced dedicated intrathecal labels in bright pink for labelling of ITC.
- We adapted the epidural documentation and monitoring during labour to produce a specific record form for managing ITC for labour analgesia.
- The form is colour coded to match the pink intrathecal line label
- The ITC form has recommendations for safe LA + opioid mixture for safe top ups to use via the ITC
- Form includes a safety check list for using ITC as labour analgesia

CHECK LIST INTRATHECAL CATHETER (ITC) FOR LABOUR ANALGESIA:

1. **ITC Catheter labelled with Intrathecal line sticker** ☐
2. **Inform Mother, midwife, Sister in Charge, Obs team** ☐
3. **Inform Anaesthetic Consultant On Call** ☐
4. **Remove epidural pump from room** ☐
5. **Add information to common white board** ☐
6. **Ensure information transferred to team at handover** ☐

Figure 1. Safety check list when using ITC for labour analgesia

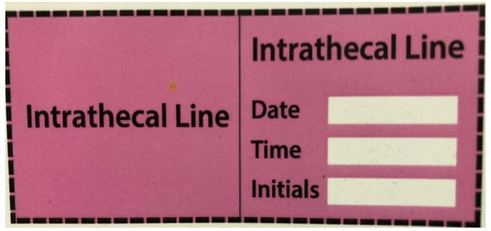


Figure 2. Dedicated Intrathecal line label for ITC insitu

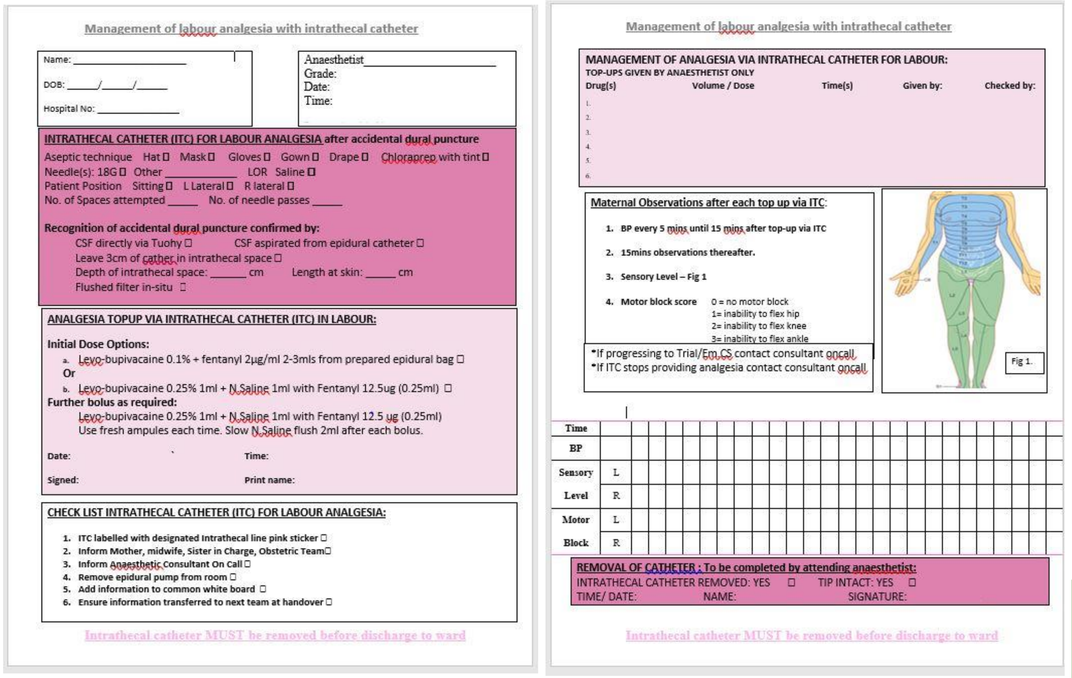


Figure 3. Intrathecal documentation and record form (left to right, front and back of form)

RESULTS

After introducing the safety measures for ITC, we are following up each ADP and use of ITC for labour analgesia, labelling, documentation on record, number of top ups, duration of ITC effectiveness and delivery outcomes.
All changes welcomed by anaesthetists and labour ward staff.
Although recommendations to leave ITC insitu for at least 24hours is thought to be affective in reducing PDPH, we ensure ITC catheters are removed before patient is discharged from Labour ward. A small number of dural punctures have occurred since and managed safely with ITC analgesia for labour and vaginal delivery. Epidural blood patch has not been required for all patients despite the ITC being in for less than 24hours.

CONCLUSION

ADP can be unsatisfactory for labouring patients with ongoing pain and potential PDPH.
ADP can also lead to loss of confidence for trainees.
However having a clear management plan for ITC use if possible after ADP that all are familiar with, is essential for effective management of labour pains while ensuring safety.
We support the use of ITC for labour analgesia after ADP as we have resident anaesthetic cover 24/7 on our labour ward.
This may not be suitable in other units out of hours with trainees cross covering other areas.
If such, we suggest to at least use ITC for 1 top up to ease patient labour pain before any further attempt at an epidural insertion or give time to establish alternative analgesia.

REFERENCES

1. Orbach-Zinger S, Jadon A, Lucas DN et al. Intrathecal catheter use after accidental dural puncture in obstetric patients: literature review and clinical management recommendations. Anaesthesia. Volume 76 Issue 8. p1111-1112