

Mobile mums: introducing a programmed intermittent bolus epidural regime to promote mobilising and increase rate of SVD

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Aim

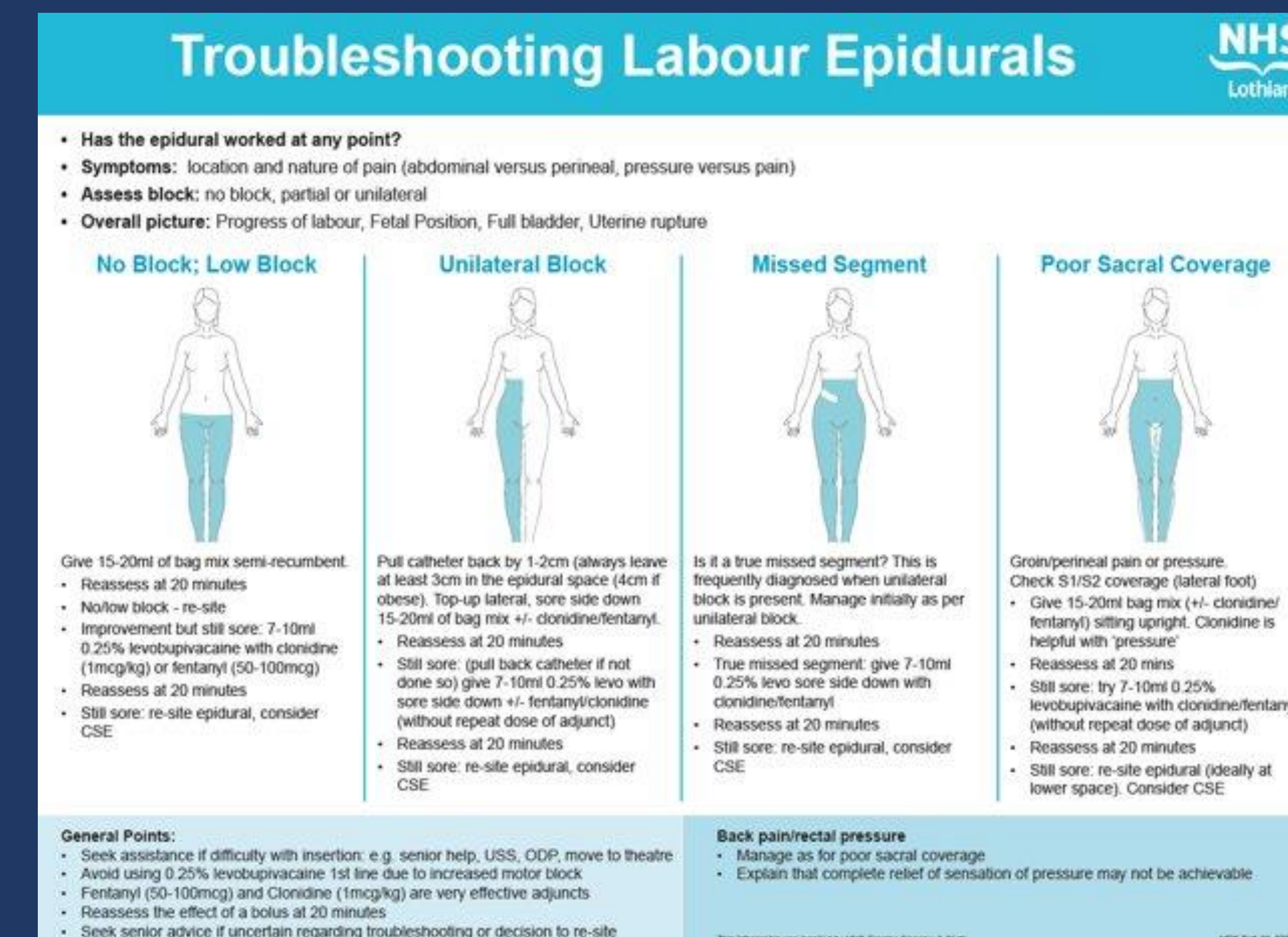
This project describes changes to epidural practice in a tertiary obstetric unit that aim to improve epidural satisfaction and SVD rates.

Background

- Upright position and mobilising during labour are associated with shorter labour duration and fewer interventional deliveries.¹
- Patient controlled epidural analgesia(PCEA) with continuous epidural infusion (CEI) significantly increases the risk of interventional delivery compared to PCEA with programmed intermittent epidural bolus (PIEB) regimes.
- PCEA/PIEB protocols not only increase SVD rates but also improve maternal satisfaction and reduce motor block, making them more compatible with mobilisation.²

Methods

- Delivery data for low-risk women was analysed from 2016-2020.
- Low-risk was defined as; age<40, term, singleton, normal birthweight, spontaneous labour, no previous LSCS and BMI 20-39.9.
- During this time, the epidural regime was PCEA/CEI(5mls/hr, 10mls PCEA, 20min lockout).
- In July 2022, a PCEA/PIEB regime was introduced(7mls bolus hourly, 7mls PCEA, 20min lockout).
- Both regimes use 0.1% levobupivacaine with 2mcg/ml fentanyl(bag-mix).
- Test-dose and trouble-shooting practice was also changed in line with guidance recommending low-dose solutions (<0.25% bupivacaine)
- In November 2022, 'mobile epidurals' were introduced.
- These changes were supported by in person training, videos and infographics.
- Data were collected from 100 consecutive epidural charts pre and post-change in October 2021 and November 2022.



Post-intervention results

- There was a significant decrease in 2% lidocaine use for test-dosing: 62% 2021 vs 7% in 2022 (P<0.0001). This was largely replaced with low-dose bag-mix: 32% in 2021 vs 90% in 2022 (P<0.0001).
- Trouble-shooting practice also changed with the use of 0.25% levobupivacaine dropping from 71.4% in 2021 to 50% in 2022 but this was not significant (P=0.159).
- There was no significant difference in average pain score(0.3 in 2021 vs 0.34 in 2022), number of clinician boluses(20% vs 21%) or epidural re-sites(1% vs 5%).

Conclusions

- Our unit epidural rate is now approximately 26%.
- Our interventional delivery rate, in low-risk women with a CEI/PCEA epidural, is high at 61%
- Evidence supports PIEB regimes.
- A PIEB/PCEA protocol has been successfully introduced.
- Test-dosing and trouble-shooting practice has changed to one which is more compatible with women mobilising.
- Ongoing evaluation of delivery data is required to fully assess whether these changes increase SVD rate in 'low-risk' women with a labour epidural.

References

- Lawrence A, Lewis L, Hofmeyr G, Styles C. Maternal positions and mobility during first stage labour. Cochrane Database of Systematic Reviews 2013, Issue 10. Art. No.: CD003934. DOI: 10.1002/14651858.CD003934.pub4
- Xu, J., Zhou, J., Xiao, H. et al. A Systematic Review and Meta-Analysis Comparing Programmed Intermittent Bolus and Continuous Infusion as the Background Infusion for Parturient-Controlled Epidural Analgesia. Sci Rep 9, 2583 (2019).
- Nice guideline - Intrapartum care for healthy women and babies <https://www.nice.org.uk/guidance/cg19>

Results

- 15,220 low-risk women were identified between 2016 and 2020 during which the PCEA/CEI protocol was used exclusively.
- 17.6% had a CEI labour epidural.
- Those with an epidural were significantly less likely to have an SVD (39% vs 81.3% p<0.0001) despite being low-risk.

