LockIt Plus reduces the rate of failed epidural analgesia and increases maternal satisfaction

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1. Background and aims

Minimising the degree of epidural catheter migration is desirable from an efficacy, patient safety and economic perspective. A reliably secured epidural catheter is likely to enable maximum analgesic effect, result in fewer failures of analgesia and provide a more satisfactory experience for parturients. Epidural catheter migration is common in the obstetric population, yet is a potentially preventable problem.

A recent randomised controlled trial conducted by our research group showed evidence of superiority for LockIt Plus® (Smiths Medical International Limited, Ashford, UK) in preventing epidural catheter migration during labour. We therefore initiated a local quality improvement program designed to further validate and translate the results from this research into longer term clinical practice.

The aims of the quality improvement program were:

1. A relative reduction in rate of resited epidurals by ≥25% in 9 months
2. To improve maternal satisfaction, measured using a Likert scale during day 1 post-natal follow up

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Intrapartum epidural fixation methods: a randomised controlled trial of three different epidural catheter securement devices*

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2. Methods

LockIt Plus was introduced into clinical practice in three phases, each lasting three months:

PDSA cycle 1

- Tegaderm™ dressings (3M Healthcare, St. Paul, MN, USA), the previous default method in the department. were used exclusively to secure catheters.
- Baseline measurements were recorded.
- A departmental presentation given explaining the research results and putative benefit of LockIt Plus.

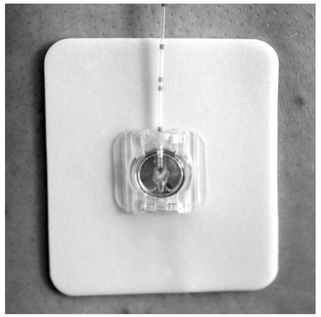

Figure 1. LockIt Plus

PDSA cycle 2

- LockIt Plus devices were provided on the epidural trolley and anaesthetists were given a choice between the new device or Tegaderm.
- Uptake in device usage was good, but not universal.

PDSA cycle 3

- Following discussion with the manufacturers of the epidural packs used on labour ward, LockIt Plus was provided within the sterile packs to further encourage usage.

During each PDSA cycle a database of prospectively collected epidural-related data was analysed, included the total number of epidurals performed, the total number of re-sites and maternal satisfaction scores.

3. Results

1260 epidurals were performed during the project period.

PDSA cycle 1: 467 epidural were performed and 31 required re-siting (7.1%). 74.4% of mothers described their epidural as "excellent" on a three-pont scale of excellent, satisfactory or unsatisfactory.

PDSA cycle 2: 390 epidurals were performed with 15 re-sites (4.0%). Maternal "excellent" satisfaction improved to 75.5%.

PDSA cycle 3: 403 epidural insertions, 14 resites (3.6%). Maternal "excellent" satisfaction improved again to 77.8%.

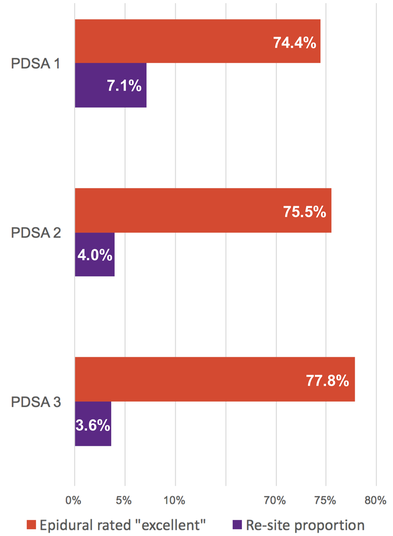

Figure 2. Change in re-sites and maternal satisfaction with epidurals

4. Discussion

LockIt Plus has been shown to reduce catheter migration when compared to other commonly used catheter fixation methods. Using QI methodology we were able to translate the reduction in catheter migration with LockIt Plus, as shown in the RCT conducted by our research group, into a clinical significant reduction of failed epidural analgesia during labour, as measured by epidural re-site proportion. This reduction correlated with increased maternal satisfaction following introduction of LockIt Plus into routine clinical practice.