Patients Following Back Surgery For Caesarean Section- A Retrospective Audit

Heartlands hospital
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BACKGROUND

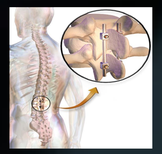
- Obstetric patients with surgical intervention on the bony structure of the vertebral column, present unique challenges to the anaesthetist .
- Concerns often arise as to whether the neuraxial procedure could harm these patients and whether these techniques will be effective.
- Prior spine surgery can dramatically change the neuraxial anatomy, obscure palpable surface landmarks and alter the 'loss of resistance' on entering the epidural space.

DISCECTOMY



SCOLIOSIS SURGICAL TREATMENT





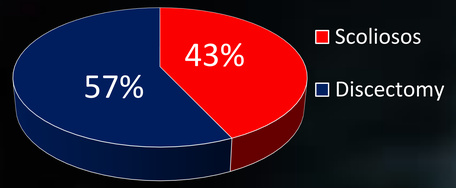
METHODOLOGY

- We have retrospectively looked at our experience with obstetric patients with prior spine surgery who had caesarean section in Heartlands Hospital.
- We collected a number of 27 cases over a period of 4 years (2018-2021).
  - 2 had no detail of surgery
  - 1 had coccyx injection
  - 1 had shoulder blades surgery after RTA

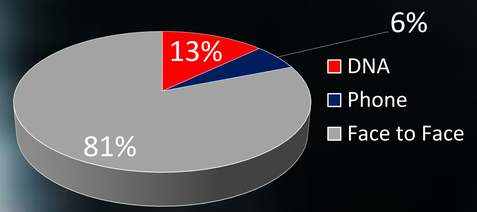
ANAESTHETIC ANTENATAL CLINIC SERVICE

- The setup of our anaesthetics service has an antenatal anaesthetic clinic.
- Patients are referred to the service and an appointment is considered based on history and information found on our patient systems.
- During the appointment there is an anaesthetic plan developed regarding analgesia and anaesthesia during labour.
- Received 20 referrals
- Offered appointment for 16
- 4 patients had enough data from previous deliveries that an appointment was not necessary
- 7 patients were not referred (none had any contraindications for neuraxial procedure as found by oncall anaesthetist)

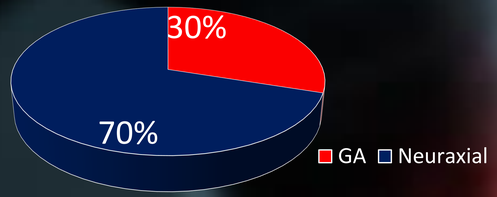
Cases for caesarian section following back surgery (Jan 2018 - Dec 2021)



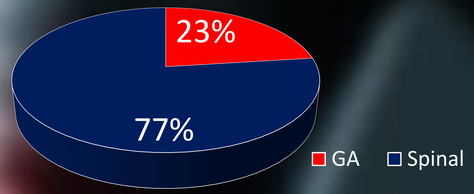
Antenatal Appointments



Patients with corrective surgery for scoliosis



Patients with discectomy at various levels



TAKE HOME MESSAGE

- Previous back surgery may impair the performance of neuraxial blockade.
- Antenatal visit- A careful preoperative examination remains mandatory while patients should be sufficiently informed about technical difficulties and block failure
- When necessary, patients should have additional technical and clinical examinations as close as possible to surgery to establish the actual pre-operative status.
- Ultrasound may be of additional help to determine the best interspace, midline and epidural space depth.

REFERENCES

- Ko JY, Leffert LR. Clinical implications of neuraxial anesthesia in the parturient with scoliosis. Anesth Analg 2009; 109: 1930–4.
- Kardash K, King BW, Datta S. Spinal anaesthesia for caesarean section after Harrington instrumentation. Can J Anaesth 1993; 40: 667–9.
- Pascoe HF, Jennings GS, Marx GF. Successful spinal anesthesia after inadequate epidural block in a parturient with prior surgical correction of scoliosis. Reg Anesth 1993; 18: 191–2.
- Smith PS, Wilson RC, Robinson AP, Lyons GR. Regional blockade for delivery in women with scoliosis or previous spinal surgery. Int J Obstet Anesth 2003; 12: 17–22.
- Hebl JR, Horlocker TT, Kopp SL, Schroeder DR. Neuraxial blockade in patients with preexisting spinal stenosis, lumbar disk disease, or prior spine surgery: efficacy and neurologic complications. Anesth Analg 2010; 111: 1511–9

REVIEW OF LITERATURE

Spinals in patients with back conditions
Vercauteren M. Regional Anesthesia and Pain Medicine 2013;38(5)

- The desired upper sensory level cannot always be achieved due to obliteration of local anaesthetic spread by persisting compression of the neural structures or previous surgery. A restricted spread may bear the risk of local toxicity.
- Neuraxial blocks may be a challenge - mutilated landmarks, scar formation or the presence of instrumentation and bone-grafts.
- Higher risk for false loss of resistance, dural tap, traumatic needle placement, unsuccessful catheter insertion and incomplete or patchy blocks.
- When the spine fusion terminates above L3-L4, needle insertion at the lower free interspaces may be attempted.

- **Ultrasound technology useful**
- **A careful preoperative examination remains mandatory while patients should be informed**

Neuraxial techniques in patients with pre-existing back impairment or prior spine interventions: a topical review with special reference to obstetrics.
Vercauteren M. Acta anaesthesiologica Scandinavica 2011;55(8):910-917.

- There were 937 patients included, 207 (22%) of whom had undergone spinal surgery. 97.6% of these patients had a successful block efficacy. Technical complications with a spinal anaesthesia occurred in 3.6 % patients.

- **A history of spine surgery did not affect the success rate or frequency of technical complications.**
- **A spinal – as compared with an epidural – technique may be preferred in patients who have undergone major spinal surgery, provided that there is no risk of puncturing the spinal cord.**

Clinical implications of neuraxial anesthesia in the parturient with scoliosis.
Ko JY, Leffert LR. Anesth Analg 2009; 109: 1930–4.

- 117 neuraxial anesthetic procedures were attempted in 103 patients (24 procedures in uncorrected patients and 93 in corrected patients).
- 64 of 93 neuraxial procedures (69%) in the corrected group -successful. The success rate of spinal techniques was similar to that of epidural techniques (72% and 66%, respectively).
- Distraction rod insertion involves decortication of vertebrae and removal of spinous processes along the extent of the curve. Scar tissue and bone grafts can hinder the entry of neuraxial needles into the desired space. Even if the surgical site is avoided, there is a higher incidence of retrolisthesis and spondylolisthesis caudal to the area of fusion.

- **Careful consideration of the timing and mode of anesthesia for labor and delivery**

Does previous back surgery affect the success of obstetric regional anaesthesia and analgesia? A retrospective audit of 10 years experience in a district general hospital
O'Neill S.S. International Journal of Obstetric Anesthesia 2009;18

- Regional anaesthetic techniques performed in these cases were: 24 spinals (for both elective caesareans and various emergency procedures).
- The spinals were generally straightforward but the epidurals were all described as difficult. In patients with previous rod implantation, success rate for regional blocks, particularly epidurals, was low.
- **Women with previous disc surgery can be offered neuraxial anaesthetic techniques for labour and delivery with confidence.**