ECRONICON OPEN ACCESS

EC GASTROENTEROLOGY AND DIGESTIVE SYSTEM

Case Report

A Case Report of Elective Caesarean Section with an Epidural Top-Up in a Pregnant Lady with Spinal Dysraphism

Gemma Maryan[1]*, Mazin Hamed[2] and Monica Morosan[1]

[1]*Department of Anaesthetics, Norfolk and Norwich University Hospital, Norwich, UK*

[2]*Department of General Surgery, Norfolk and Norwich University Hospital, Norwich, UK*

***Corresponding Author:** Gemma Maryan, Department of Anaesthetics and Critical Care Medicine, Norfolk and Norwich University Hospital, Norwich, UK.

Received: June 19, 2021; **Published:** August 16, 2021

Abstract

Here we discuss the case of a pregnant woman with asymptomatic spinal dysraphism and leptomeningeal cyst who attended high-risk pre-assessment clinic to discuss options for labour. She was reviewed and an Ultrasound Scan (USS) guided epidural was performed successfully for an elective operative delivery. A healthy baby girl, 3.4 kilograms (kg), was delivered 42 minutes (min) after epidural anaesthesia execution. At the end of surgery 3 milligrams (mg) diamorphine was injected into the epidural space for post-operative analgesia then the epidural catheter was removed. Partial motor block recovery began and appeared complete in about 2 hours post-surgery. Post-operative pain was controlled using regular paracetamol and ibuprofen with as required oramorph. This case demonstrates that neuraxial anaesthesia can be an alternative in women with spinal dysraphism however very careful assessment is mandatory.

Keywords: *Spinal Dysraphism; Epidural Anaesthesia; Caesarean Delivery*

Introduction

Neuraxial techniques are widely used for anaesthesia and analgesia in current obstetric practice due to efficacy and general low risk major complications [1]. However, in the population of patients with spinal dysraphism concerns remain overusing neuraxial technique, hence general anaesthesia is frequently used [2]. Pregnant women are motivated to stay awake during surgery, in this group of patients; an increased risk of caesarean delivery and neuraxial risks means a general anaesthetic is often used.

Case Report

A 32-year-old, primigravida Caucasian woman came to the high-risk pre-assessment clinic in her 16 weeks of gestation having been referred for an operation on her back previously. She was not sure about what the exact condition was but she underwent liposuction on her lower back in a neurosurgical unit at the age of 13. One of the difficulties was that this case presented at the height of the COVID-19 pandemic, hence no notes were available. Having suspected something more to the diagnosis, a request was made to the original hospital for her scanned notes to be sent over. She had spinal dysraphism with no neurological symptoms present. There was no Chiari malformation reported on her Magnetic Resonance Imaging (MRI) from 2001. A check MRI was done in 2016 privately (report requested) however there was a clear discrepancy between the images and the report that stated no abnormalities. A second radiological opinion was sought and it confirmed a low lying tethered cord and a leptomeningocele at the level L5/S1 on MRI. Following this spinal anaesthesia

was deemed too high risk for elective surgery. An epidural approach was agreed to be a suitable neuraxial technique for elective surgery if performed under USS guidance above L5/S1. If the patient suffered from pain intra-operatively, a plan was made to add a remifentanil infusion, top-up epidural or to offer the patient General Anaesthesia (GA).

With the patient in the sitting position, her back was scanned using an ultrasound to determine the L3/4 interspace and her skin was marked at this. After minor adjustments to the catheter related to an initial unilateral block, a block to T4 cold was demonstrated 30 minutes after the initial dose.

During surgery (approximately 1 hour) the patient reported mild sharp pain, which resolved with a remifentanil infusion. GA was offered to the patient as an alternative but was declined at this stage.

A healthy baby girl, 3.4 kilograms (kg), was delivered 42 minutes (min) after epidural anaesthesia execution. Apgar score was 9 at 1 min and 9 at 5 min. The surgery lasted about 90 min and no neonatal complications were noted on initial checks. At the end of surgery, 3 milligrams (mg) diamorphine was injected into the epidural space for post-operative analgesia and the catheter removed. Venous Thromboembolism (VTE) score was 1 for her elective C-section and therefore prophylactic subcutaneous low molecular weight heparin (LMWH) was not prescribed. The patient was wearing a graduated compression stockings (GCS) and intermittent pneumatic compression (IPC) device was used during surgery.

At the end of intervention, partial motor block recovery began and appeared complete in about 2 hours. Post-operative pain was controlled using regular paracetamol and ibuprofen with as required oramorph.

Discussion

Spinal dysraphism refers to an extremely heterogeneous group of disorders of the vertebral arches, spinal cord and meningeal layers which have multiple implications for the provision of peripartum anaesthetic care [3]. A tethered cord is defined as an abnormal attachment of the spinal cord to its surrounding tissues. The radiologic diagnosis requires a low-lying conus medullaris and a thickened (more than 2 mm) filum terminale [4]. The anatomical and neurological implications of complex spinal defects with or without neural tissue involvement could make regional anaesthesia difficult, but not absolutely contraindicated [5-7].

Pre-operative assessment should be offered well before the patient's due date and a full sensory and motor examination should be performed and documented. The extent of the anatomical level of the bony defect should be established by clinical examination and imaging as required. Magnetic resonance imaging is recommended to clarify anatomical abnormalities and to identify levels at which neuraxial techniques can be performed.

In the present case, USS guidance was used to mark the spinal interspace for epidural to be performed at to minimise the risk of hitting the leptomeningeal cyst.

Conclusion

We considered that epidural catheterisation for our patient was relatively safe. This was due to a thorough approach to the pre-existing clinical features and detailed examination [8]. Epidural technique may represent a valid anaesthetic technique when the risk-benefit ratio discussed and MRI images available for review. USS guided neuraxial technique was used in this case to further minimise identifying the incorrect level and lower the risk of the procedure when executing it with the added precise knowledge of the patients MRI anatomy.

This case demonstrates that neuraxial anaesthesia can be an alternative in women with spinal dysraphism however very careful assessment is mandatory.

Bibliography

1. Valente A., *et al*. "Occult spinal dysraphism in Obstetrics: A Case report of caesarean section with subarachnoid anaesthesia after remifentanil intravenous analgesia". *Case reports in Obstetrics and Gynaecology* (2012).

2. Nuyten F and Gielen M. "Spinal catheter anaesthesia for caesarean section in a patient with spina bifida". *Anaesthesia* 45.10 (1990): 846-847.

3. Blatter BM., *et al*. "Heterogeneity of spina bifida". *Teratology* 55 (1997): 224-230.

4. O'Neal M. "A pregnant woman with spina bifida: need for a multidisciplinary labour plan". *Frontiers in Medicine* (2017).

5. Preston R and Grosby ED. "Spinal cord injury". Gamvling DR, Douglas MJ editions. Obstetric Anaesthesia and Uncommon Disorders. WB Saunders (1998): 251-254.

6. Tidmarsh MD and May AE. "Epidural anaesthesia and neural tube defects". *The International Journal of Obstetric Anesthesia* 7 (1998): 111-114.

7. Bromage PR. "Epidural Analgesia, 2nd Edition". Philadelphia: PA Saunders (1979): 707-708.

8. Altamimi Y et and Pavy TJG. "Epidural Analgesia for Labour in a Patient with a Neural tube defect". *Anaesthesia and Intensive Care: SAGE Journals* 34 (2006): 816-819.

Volume 8 Issue 9 September 2021