

INTRODUCTION

Scoliosis is a relatively common condition within the general population. Females are affected twice as often as males and with a higher degree of severity. Many women will undergo corrective spinal surgery at some point in their life. Parturients with corrected scoliosis have greater rates of inadequate or failed anesthesia/analgesia.^{1,2} Hardware, bone grafts and the scar tissue can make access to the epidural space extremely difficult. Even if the epidural space is successfully entered, the spread of local anesthesia may be disrupted ultimately leading to a patchy or unilateral block. It is therefore crucial for an obstetric anesthesiologist to understand the potential implications that corrective spinal surgery can have when it comes to neuraxial analgesia/anesthesia. Lumbar ultrasound has become a promising tool to assist with neuraxial techniques in this population.³ We present a method of consultation for antenatal patients who have had prior spine surgery.



Figure 1. Radiograph of thoracic and lumbar scoliotic spine with hardware



**Mount
Sinai
Morningside**

Antenatal Anesthesia Consultation for Spinal Fusion: Please Bring Your Smartphone!

Ghislaine C. Echevarria, M.D. M.S., Thomas Gruffi, M.D., Mickael Khouzami, M.D., Michael S. Balot, D.O.

Department of Anesthesiology at Mount Sinai Morningside & West Hospitals



**Mount
Sinai
West**

METHODS

An anesthesiologist who is proficient in lumbar ultrasound performed all antenatal anesthesia evaluations. After a thorough history and physical examination, we used ultrasound to scan the patient's lumbar spine to identify the extension of the hardware and potential space(s) where neuraxial anesthesia could be performed. Then, a pen was used to mark the patients back at those exact level(s). An identifiable surgical scar or beauty mark on the patient's back that was close to this area was used as a landmark and its distance to the ideal interspace(s) measured with a ruler. With permission from the patient, we used their smartphone and took clear pictures of both the ultrasound image showing the depth to the epidural space and the markings on their back.



Figures 1 & 2. Patients marked after Ultrasound with reference to a scar or birthmark



Figure 2. (left) Ultrasound image of the neuraxium (vertical orientation) with a green arrow marking the caudal termination of hardware

Antenatal Anesthesia Consultation for Spinal Fusion: Please Bring Your Smartphone!

Ghislaine C. Echevarria, M.D. M.S., Thomas Gruffi, M.D., Mickael Khouzami, M.D., Michael S. Balot, D.O.

Department of Anesthesiology at Mount Sinai Morningside & West Hospitals

DISCUSSION

In our experience, when patients who have had prior spine surgery present in active labor and request neuraxial anesthesia, the procedure can be extremely difficult and time consuming. When they present in active labor, by having the images stored in their phone, the information can be easily accessed and used by the anesthesia team, independently of the proficiency in the use of lumbar ultrasound. Despite the risk of neuraxial block failure due to scar tissue and/or adhesions, we hope this process will increase the rate of successful neuraxial placement and improve patients' overall birthing experience.

REFERENCES

1. Smith PS et al. Int J Obstet Anesth. 2003 Jan;12(1):17-22
2. Ko JY, Leffert LR. Anesth Analg. 2009 Dec;109(6):1930-4.
3. Manoj K. Karmakar and Ki Jinn Chin. <https://www.nysora.com/techniques/neuraxial-and-perineuraxial-techniques/spinal-sonography-and-applications-of-ultrasound-for-central-neuraxial-blocks/> (accessed 02/01/2022)

