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Case Report

Management of symptomatic disc herniation in pregnancy: A case report and literature review

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ABSTRACT

Background: Lower back pain with radiculopathy due to a disc herniation occurs in about 0.01% of pregnant females. Surgical intervention is seldom required unless there is intractable pain, and for a significant neurological deficit. Further, the use of intraoperative ionizing radiation may adversely affect the developing fetus.

Case Description: A 25-year-old female, 17-weeks pregnant, presented with right lower extremity sciatica due to a L4-5 unilateral disc herniation. She underwent a microdiscectomy that required just one intraoperative C-arm fluoroscopic image. Postoperatively, her leg pain resolved, and she delivered a healthy baby at term.

Conclusion: Using single-image C-arm fluoroscopy in a pregnant female undergoing an emergent lumbar discectomy, employing as low as reasonably achievable/shielding, did not adversely impact the developing fetus.

Keywords: Ionizing radiation, Microdiscectomy, Pregnancy

INTRODUCTION

Lower back pain with radiculopathy due to a disc herniation occurs in 0.01% of pregnant females, with just 15% of those patients going on to develop significant neurological deficits warranting surgical intervention.[3] Here, we highlighted the need to perform just single C-arm cross table fluoroscopy to confirm the lumbar level, thus avoiding injury to the developing fetus.

CASE REPORT

A 25-year-old, 17 week pregnant female, presented with severe lower back pain radiating posterolaterally into her right lower extremity of 3 months duration. When she failed conservative therapy, an MRI was performed that showed a right-sided L4-L5 disc herniation with severe canal stenosis. As she exhibited significant unilateral deficits (motor 4/5 quadriceps/extensor hallucis longus/dorsiflexor), she underwent a right-sided L4-L5 microdiscectomy. This was performed in the prone position and utilized a single lateral C-arm fluoroscopic image (e.g., using as low as reasonably achievable [ALARA]/shielding for the fetus-lead aprons over her abdomen) to confirm the correct vertebral level [Figure 1]. Postoperatively, the patient's symptoms/signs fully resolved, a finding confirmed in clinic 10 days later. 22 weeks later, she delivered a healthy full-term baby girl.

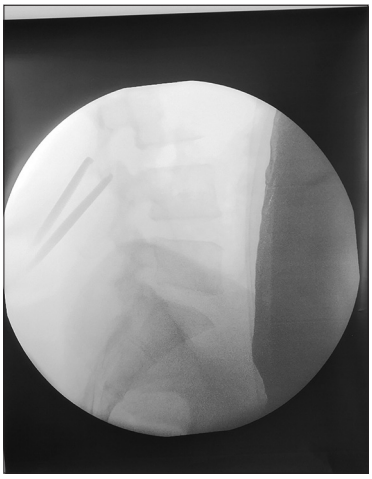

Figure 1: C-arm image during surgery.

DISCUSSION

The incidence of LBP associated with true radiculopathy from disc herniations has been estimated to occur in approximately 1 in 10,000 pregnant women.[2,6] Based on the available literature, one expects fewer than 15% of lumbar disc herniations to lead to severe neurological deficits during pregnancy.[3]

Performing X-rays in pregnant women has long been known to carry risks. In 1929, Goldstein and Murphy found a 34% incidence of congenital malformations in the progeny of 74 women who had undergone radiation treatment for uterine cancer during pregnancy.[4] In 2015, Harel and Knoller published their experience with intra-operative ultrasound (IUS) in 78 eligible spine surgery cases and concluded that IUS was beneficial, without complications.[5] To avoid utilizing X-ray in pregnant women undergoing lumbar surgery, some surgeons have considered making larger incisions and counting spinous processes from the sacrum to the desired level.

The American College of Obstetricians and Gynecologists recommends postponing procedures until after delivery or at least until well into the second trimester although it recognized that surgery cannot be delayed in certain cases.[1]

At present, it is considered safe to perform MRI and ultrasonography in pregnant patients.[7] However, as in our case, patients require intraoperative X-ray confirmation of the correct level utilizing appropriate fetal shielding (i.e., to reduce fetal radiation), to avoid wrong-level surgery, and allow for successful lumbar microdiscectomy.

CONCLUSION

Here, we utilized ALARA precautions to limit the ionizing radiation employed to confirm intraoperatively the correct level of a disc herniation in a 25-year-old female who was 17-months pregnant. Following the right-sided L45 disc removal, the patient delivered a healthy baby girl 22 weeks later.

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

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Conflicts of interest

There are no conflicts of interest.

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