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Case Report
Anaesthetic Management

Anaesthetic Management of a Patient With Varicella For Emergency Caesarean Section

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Varicella zoster (VZ) is a highly contagious virus, and it can cause two different diseases: chicken pox as the primary infection and later reactivation as shingles or herpes zoster. Approximately 5–10% of pregnant women lack antibodies to VZV and may acquire varicella during pregnancy. We present a case of a 20-year-old woman with herpes zoster who presented for emergency caesarean section because of foetal distress while discussing the anaesthetic issues related to varicella in pregnancy.

Keywords: Varicella, caesarean section, herpes zoster

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Introduction

Varicella is usually a mild and self-limiting disease, but severe complications like pneumonia, hepatitis, meningitis, encephalitis and bleeding diathesis can occur in adults and immunocompromised persons. We describe a case of 20 year 20-year-old woman with herpes zoster who presented for an emergency caesarean section, and discuss the anaesthetic issues related to varicella in pregnancy.

Case report

A 55 kg, 20-year-old primigravida at 34 weeks presented to the hospital with decreased fetal movement. The patient had raised blood pressure for the last 4 months and was on oral labetalol 100 mg daily. On evaluation, the patient had a fair general condition with a blood pressure of 134/100, for which injection of labetalol 20 mg IV bolus and magnesium sulphate therapy and induction of labour were initiated. Also, the patient had multiple papulo-vesicular rashes on the back and left side of the abdomen. (Figure 1&2)

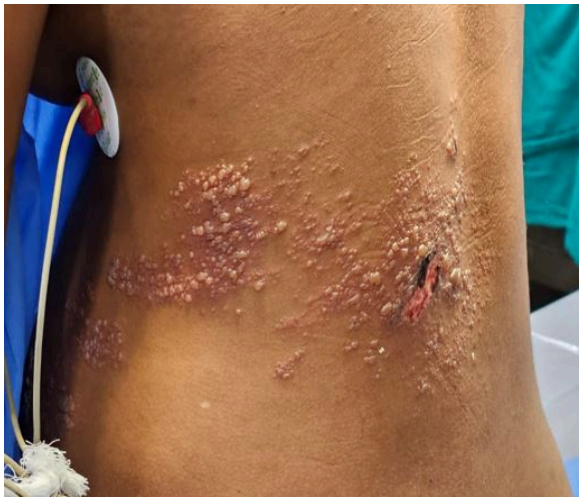

Figure 1: Varicella lesions on the back and left side of the abdomen

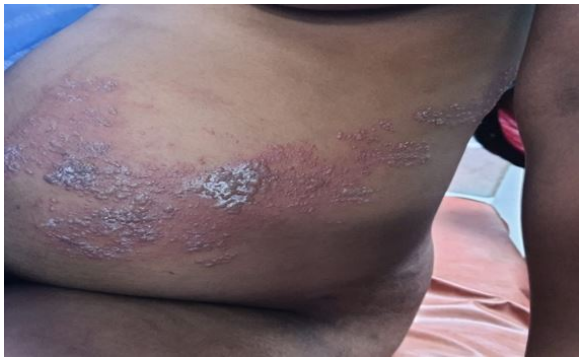

Figure 2: Varicella lesions left side of the abdomen

On enquiry, the patient gave a history of lesions starting from the left side of the abdomen over the last 4 days and spreading to an area of $T_{9\text{-}10}$ dermatomes. A dermatologist consultation was done, and T. acyclovir 800 mg 5 times a day was started for seven days. There was no history of previous immunisation, and there was no history of exposure to varicella. Preoperative investigations were Hb 9.7 gm/dl, and the rest investigations were normal.

The patient was shifted to the emergency operating room because of fetal distress. In the preoperative area, she was afebrile on touch. Examination of the oral cavity showed no lesions. Systemic examinations were unremarkable. On airway examination, the patient had an adequate mouth opening with adequate neck extension, and the Modified Mallampati class was II.

The patient was fasting for 6 hours. A high-risk consent foranaesthesiawas obtained. Ranitidine 50 mg and metoclopramide 10 mg were given intravenously.

An experienced team comprising an anesthesiologist, obstetrician, and neonatologist were in attendance. In the operating room, all routine monitors were applied and continuously monitored. Oxygen supplementation was initiated through a simple facemask at 5 L/min, and left uterine displacement was ensured. Her baseline blood pressure was 139/95 mmHg, her heart rate was 82 beats/min, and oxygen saturation was 99% on room air. 18G intravenous access was secured, and Ringer's lactate was started. With the patient in the sitting position, a subarachnoid block was performed at the $L_{4\text{-}5}$ intervertebral space through the midline approach with the 25-G pencil-point Quincke needle. After confirming the free flow of cerebrospinal fluid, 10mg hyperbaric bupivacaine (0.5%) with 10 µg fentanyl was injected intrathecally. The patient was placed in a supine position, maintaining left uterine displacement. Bilateral T_4 sensory level to pinprick was obtained after 2 min. The surgery commenced through Pfannenstiel incision, and a 1.9 kg infant was delivered with the APGAR scores of 9 at both 1 and 5 minutes. 2 U bolus oxytocin was administered, followed by an infusion of 15 U oxytocin in 0.9% saline, 500 mL over 5 hours. The uterus was well contracted, and the rest intraoperative period was uneventful.

All hemodynamic parameters were well-preserved throughout the 50 minutes of surgery and blood loss of 500 ml. Urine output was 100 ml, and a total of 1200 ml of crystalloid was given. There were no varicella lesions on the baby. Both mother and baby were discharged on day 9 of delivery with no complications.

Discussion

Varicella is a disease caused by a DNA virus named varicella zoster virus (VZV), which belongs to the herpes virus family. This virus may lie inactive in the dorsal root ganglia for a long period and may get reactivated can result in localised skin lesions known as 'herpes zoster' (shingles). The VZV infection risk is about 95%. Only 2% of cases occur in adult life, but they still cause 25% of all VZV-related deaths. The effects of primary VZV in pregnancy for both mother and foetus vary with the gestational age. The baby is at the highest risk in the first and second trimesters, whereas the mother is in the third trimester. [2]

This virus can be transmitted by direct contact or via aerosolised respiratory droplets. The symptoms include rash with low-grade fever and malaise. The most common complication includes secondary bacterial superinfection caused by Streptococcus pyogenes or Staphylococcus aureus. The central nervous system is the most common extra-cutaneous site involved. Acute cerebellar ataxia, encephalitis, aseptic meningitis, and Guillain–Barré syndrome can also occur. The potential risks of varicella infection among adults are a concern and challenge to physicians and have important implications for susceptible pregnant women. Early recognition, evaluation and management are important in preventing serious maternal complications. A patient with signs of primary varicella needs to be evaluated for varicella pneumonia, and intravenous acyclovir should be given when varicella pneumonia is present. [2]

Foetal complications include congenital varicella syndrome, characterised by skin lesions, neurological & eye defects, limb hypoplasia, restricted intrauterine growth & developmental delay. [3] Choice of anaesthesia in obstetric patients with varicella depends on patient's clinical condition. On review of literature, we found two similar cases of caesarean section of patients with varicella conducted under general anaesthesia.[2]

It has been seen that the response to immune function is diminished under general anaesthesia, which is mainly due to inhalational agents. However, we could not locate any case of a pregnant patient with varicella for emergency caesarean section under regional anaesthesia.

Performing subarachnoid block in pregnant patients with viral infections such as active herpes infections and human immunodeficiency virus (HIV) is controversial.2 One major concern of performing regional anaesthesia is injecting the virus into the CSF, which may lead to meningitis or encephalitis.

The other major concern is the protection of health professionals from getting exposed while conducting an infectious patient. Personnel with previous exposure to this virus may have some immunity. However, the anaesthesiologist conducting the case must be careful.[3]

We chose to administer a subarachnoid block to our patient as the patient was afebrile and had no signs or symptoms of pneumonia. Also, the patient had no lesions at the site of spinal needle insertion. A sitting position for the block was chosen as the patient was unable to lie supine because of widespread lesions on the abdomen. Subarachnoid block was proved successful in our case with no maternal and foetal complications.

Conclusion

Both regional and general anaesthesia can be administered in obstetric patients with varicella, depending on the patient's clinical condition and the nature of surgery.

The risks and benefits of both types of anesthesia should be considered. Subarachnoid block proved safe and successful in our case. The complications of varicella, especially bleeding diathesis, myocarditis and hepatitis, must be remembered and ruled out before the anaesthesia.

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