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ANAESTHETIC MANAGEMENT OF A PARTURIENT WITH ACUTE VARICELLA INFECTION PRESENTED FOR EMERGENCY CESAREAN SECTION UNDER GENERAL ANAESTHESIA: A CASE REPORT

Anaesthesiology

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ABSTRACT

We report the successful management of a 25year old G2P1L1 with Term gestation age with prior LSCS in active labour with fetal distress with active varicella zoster infection posted for emergency LSCS under general anaesthesia perioperative course was uneventful with satisfactory maternal and fetal outcomes.

KEYWORDS

Varicella; Zoster; Lower segment cesarean section; General anaesthesia.

INTRODUCTION

Varicella or chickenpox is an extremely contagious infection caused by the Varicella Zoster virus (VZV).It is a benign illness of childhood with exanthematous rash[1]. However it has a higher rate of complications seen in adults mainly in pregnant women and immunocompromised adults [2]. Pregnant with active varicella infection presented for caesarean section pose several challanges regarding choice of anesthesia .Here we present the anesthetic management of a parturient with active varicella infection for emergency caesarean section.

CASE REPORT

A 25 years old(50 kgs, 156cms height) G2P1L1 with term gestation age with prior LSCS presented to emergency room in active labour for safe confinement. At the time of presentation , she had a history of 5 days of fever, followed by maculopapular rash which started initially on face and then progressed to trunk . She had been previously immunized and did not give any history of exposure to varicella.

On preanesthetic evaluation ,she was afebrile and vitals were as follows HR-89/min, BP- 110/70 mm Hg,SPO2- 99% in RA,RR-14/min and on auscultation chest was clear without any adventitious sounds. She was posted for emergency LSCS in view of active labor with previous LSCS and fetal distress.

On arrival to the operating room , an 18G iv cannula was secured . she received prophylactic antibiotic and IV pantoprazole 40mg and IV metoclopramide 10 mg prior to surgery. Preloading was done with 300ml of ringer's lactate. Standard monitoring -5 lead ECG, NIBP,SPO2 was connected and baseline values were normal. General anesthesia was given as patient had generalized active maculopapular rash throughout the body including lumbar spine.

After preoxygenation for 3min, rapid sequence induction and intubation was done with IV propofol 100mg and succinylcholine 100mg and intubated with 7mm cuffed endotracheal tube and connected to MV support-VCV mode with VT- 400mland RR- 14/min and anaesthesia was maintained with O2- 3 lit/min and N2O 1 lit/min each with sevoflurane 0.5% and IV atracurium 25mg. An alive male baby of 3kgs was delivered with APGAR of 8 and 10 at 1 and 5 min respectively. After baby delivery IV fentanyl 70mcg and midazolam 1 mg was given and oxytocin started at 10U/hr and baby was shifted to NICU for further monitoring. She was hemodynamically stable and the procedure was uneventful. At the end of the surgery she was reversed with IV neostigmine 2.5 mg and glycopyrrolate 0.4mg, and extubated and shifted to HDU and kept on oxygen support for 6hrs and started on oral Acyclovir 500mg TID , topical calamine lotion and antibiotics. Her rash gradually disappeared in the next 5 days and her postoperative period was uneventful. The neonate was kept NICU for 2 days, she was discharged on 7th postoperative day.

DISCUSSION

The occurrence of chickenpox in pregnancy is estimated to be only 0.4-0.7 per 1000live births. Delivery during the period of rash is presumed to increase risk of fetal transmission, and hence it is recommended to have minimum 7 days interval between onset of rash and delivery [3]. In our case, the delivery was necessitated due to fetal distress on day 5 of onset.

The commonest complication is secondary bacterial superinfection of skin generally by streptococcus pyogens or staphylococcus aureus. The commonest extracutaneous site in children is the CNS. Aseptic meningitis, encephalitis, transverse myelitis, GBS and Reyes syndrome can occur. Varicella pneumonia is the commonest complication following infection in adults. Other complications include myocarditis, corneal lesions, nephritis, arthritis, bleeding diathesis, acute glomerulonephritis, and hepatitis [4]. Varicella in pregnancy has several implications for the mother and the fetus depending on the period of gestation . in general, lesions tend to be numerous and there is an increased risk of maternal complications especially pneumonia in the third trimester. For the fetus the risk is greatest in the first and second trimesters. Congenital varicella syndrome characterized by skin lesions, neurological and eye defects, limb hypoplasia, intrauterine growth retardation, internal organ defects, and developmental defects and developmental delay can occur due to direct viral damage during development [5].

Perinatal varicella is associated with an increased fetal mortality when the disease develops within 5 days before delivery or within 48hours thereafter. Since the newborn does not receive protective transplacental antibodies and has an immature immune system,the disease maybe unusually severe. Mortality rate may be as high as 30%. In these newborns at high risk of developing varicella, passive immunization with zoster immunoglobulin is recommended. Acyclovir therapy is administered if varicella occurs [6].

Maternal varicella has several implications for the anesthetist. The optimal technique of anesthesia has been the subject of debate. Spinal or epidural block may introduce the virus into the CNS with resultant meningitis or encephalitis. Additionally as the skin lesions of chicken pox are prone to secondary bacterial infections; it may lead to bacterial seeding of CNS. Camann and Toumala advised regional block for at least 2 weeks after onset of varicella symptoms[7]. However, neuraxial blocks have also been used safely when performed at site free of lesions and has been the choice because of the high risk of pneumonia [8]. Brown et al reported a case where spinal anesthesia was administered to a parturient with varicella for a planned caesarean section. They suggested that the use of pencil point needle may reduce the risk of introduction of viral material in to the CNS [9]. Sites et al reported a case where extensive vulvar and vaginal lesions

necessitated abdominal delivery . In this patient spinal anesthesia was avoided due to extensive lesions on the back and caesarean section was performed under general anesthesia[10].

The main concern with use of general anesthesia is postoperative pneumonia. There is evidence that general anesthesia produce a decrease in immune function response. Nitrous oxide, inhalational agent e.g.: isoflurane, sevoflurane, desflurane have all been implicated. Risk factors for varicella pneumonia include maternal smoking , women in third trimester ,skin lesions greater than 100 and presence of pharyngeal lesions . if general anesthesia has to be used it maybe prudent to avoid inhalation agents by use of opioids, muscle relaxants and 100% oxygen. In our case , general anesthesia was maintained with less N2O and less sevoflurane -only 0.5% and also our case doesn't show any respiratory abnormalities perioperatively.

Exposure of medical personnel to the infectious patient is also a matter of concern. Previous exposure to the varicella zoster virus may confer immunity. However, the anesthesiologist handling the case must be cautious. Vaccination is routinely recommended for all susceptible health workers and is preferred method for preventing varicella in health care settings [11]. Our entire team took universal precautions in handling this case, Our experience could help in adding to evidence showing lack of viral pneumonitis following general anesthesia with a postoperative course of acyclovir in a case of active varicella zoster for emergency surgery.

CONCLUSION

Regional as well as general anesthesia have been used for cesarean section in a parturient with varicella but the technique of anesthesia depending upon various factors ,e.g. site of infection ,the involvement of vulvar and vaginal lesions ,duration of illness and illness associated with respiratory problems like pneumonia. Our case report is evidence of a successful outcome of a parturient with active varicella posted for emergency LSCS under general anesthesia with good maternal and fetal outcome.

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