

# Anaesthetic Management Of A Patient With Varicella Undergoing Emergency Caesarean Section

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## Abstract

We report a case of 27 year old primigravida at 39 weeks gestation suffering from chicken pox requiring emergency caesarean section that was managed with general anaesthesia. Anaesthetic management and clinical implications are discussed here. Key words: chicken pox, caesarean section, General anaesthesia.

## INTRODUCTION

Chicken pox is caused by Varicella zoster virus (VZV) which is a DNA virus. VZV causes two distinct diseases; chicken pox as the primary infection and later when VZV reactivates shingles or herpes zoster. Chicken pox is highly contagious and transmitted by respiratory droplets and by direct contact with vesicle fluid. This infection has its clinical presentation as high fever followed by generalized vesicular lesions. Pruritic skin lesions start after 1-2 days of fever on the face and then progressed to all over body becoming pustular.

The diagnosis of chicken pox is performed on the basis of clinical history and clinical classical sign and symptoms. It is a mild and self limiting disease in children but severe complications like pneumonia, hepatitis, meningitis, encephalitis and bleeding diathesis can occur in adult and immuno-compromised person. We present the case of a primigravida with varicella who was posted for an emergency caesarean section and successfully managed.

## CASE REPORT

A 27 year old primigravida at 39 weeks gestation, weighing 57kg of ASA II physical status was taken for emergency caesarean section. Indication for caesarean section was foetal distress. Eight days before she was suffering from fever, malaise, mild dry cough and development of rash began on face then progressed to trunk and abdomen. The rash began 2 days after fever and becoming pustular. Crusting of rash began on 5<sup>th</sup> day after appearance. There was no history of exposure to varicella and she had not been previously immunized. She had received acyclovir therapy. She was on

antihypertensive treatment with tab. Atenolol 5mg O.D. since 3 months regularly.

On examination her extremities, face, trunk, abdomen and back were covered with lesion that were in various stages of healing. No lesion was present in oral cavity. She was afebrile, pulse rate was 76 per minute, blood pressure was 130/84mmhg and SPO<sub>2</sub> was 100%. On auscultation, chest was clear bilaterally and heart sounds were normal. ECG was within normal limit and X-ray chest showed no evidence of varicella pneumonia. Laboratory tests including complete haemogram, liver function test, renal function test, serum electrolytes and coagulation profiles were normal. She had taken nothing orally since 6 hours.

Because of presence of vesiculopapular rash all over the body, we decided to take the case under general anaesthesia. The patient was counseled and informed consent had taken. IV line secured and vitals are monitored.

In premedication IV Metoclopramide 10mg and IV Ranitidine 50mg was administered 15 minutes before induction. Patient was preoxygenated for 5 minutes then induction done with injection Thiopentone 5mg/kg and tracheal intubation was facilitated with inj. Scoline 1.5 mg/kg using cricoid pressure. Patient was maintained on controlled ventilation using 100% oxygen and a muscle relaxant inj. Vecuronium (0.02mg/kg as intermittent bolus dose at every 20 minutes) throughout procedure. Following delivery of baby IV inj. Midazolam 1mg and IV Fentanyl 75 mcg was administered because opioids and sedative cross the placental barrier and may affect the fetus, should be avoided until the umbilical cord has been clamped. Oxytocin

infusion was also started immediately after delivery. Baby was healthy (weight 2.8kg) and APGAR scores were 9/10. There were no varicella lesions on the baby.

At the end of surgery, the patient was reversed with IV inj. glycopyrrolate 0.5 mg and IV neostigmine 2.5mg and extubated. Postoperative analgesia given in the form of IM inj. Diclofenac sodium 75mg s.o.s. The patient was discharged on 4<sup>th</sup> postoperative day. The patient and her newborn baby were healthy at the time of discharge from hospital.

### DISCUSSION

Chicken pox is a highly infectious disease caused by Varicella-Zoster virus. It is transmitted by respiratory droplets. This infection has its clinical presentations as high fever with generalized vesicular lesions.<sup>[1,2]</sup> This is a highly contagious disease.

Similar to general population, there is no difference in clinical presentation of chicken pox in pregnancy.<sup>[3-5]</sup> The pregnant subjects who get chicken pox will develop the high fever and can last for 7 days due to the nature of viral infection. The skin lesions usually help clinical diagnosis of the disease. Usually, the pruritic skin lesions start after 1-2 days of fever.<sup>[3]</sup> The vesicular skin lesion is the hallmark of the disease. The contact with skin fluid can be the mode of disease transmission.

Now a day due to improved sanitation, the disease hits the higher aged group.<sup>[6]</sup> Varicella pneumonia is the commonest complication following infection in the adult. Other complications include myocarditis, corneal lesions, nephritis, arthritis, bleeding diathesis, acute glomerulonephritis and hepatitis. Risk factors for varicella pneumonia are maternal smoking, women in third trimester, skin lesions greater than 100 and presence of pharyngeal lesions.<sup>[7]</sup>

The diagnosis of chicken pox, either in pregnant or non-pregnant subjects can be easily performed on the basis of clinical history and clinical classical signs-symptoms.<sup>[8]</sup>

Pregnant women who have a history of a previous chicken pox infection or who have been immunized have antibodies to the virus. These antibodies are transferred to the infants therefore, for these women do not need to worry about complication for themselves or their infants. Primary chicken pox infection in the first trimester of pregnancy, especially weeks 8-12 carries a 2.2% risk of congenital

varicella syndrome. The most common manifestation of this syndrome is scarring of skin. If a woman acquires a primary infection within 5 days before and 2 days after delivery her newborn is at risk for disseminated varicella infection. This infection leads to death in 25% of cases.

Women who are not immune to varicella, but are exposed may be treated with varicella-zoster immunoglobulin (VZIG). VZIG should be administered within 96 hours of exposure. If VZIG is not available, prophylaxis can be provided by acyclovir (800 mg orally 5 times daily for 7 days). If a patient develops acute varicella, with or without prophylaxis, she should be treated with oral acyclovir or valacyclovir. If a patient develops evidence of pneumonia, encephalitis, severe disseminated infection, or if she is immuno-compromised, she should be hospitalized and treated with intravenous acyclovir (10 mg/kg every 8 hours for 10 days).<sup>[9]</sup>

In order to prevent neonatal varicella, the newborn should be isolated from the mother until all her lesions crusted and dried. The infant should also be treated immediately with either VZIG or acyclovir.<sup>[9]</sup> There are no data indicating that treatment of the mother infected with varicella will prevent congenital varicella infection.

The optimal technique of anaesthesia for these patients has been the subject of debate. Regional or general anaesthesia can be used but risks and benefits of whichever technique we want to be used should be considered. As in our case we choose general anaesthesia because there were active or infected lesions on the skin at the site for placement of regional block. Regional anaesthesia may introduce virus into the central nervous system resulting in meningitis or encephalitis, especially when viraemia is present. It may be safe in recurrent herpes infection because viraemia is absent.<sup>[10]</sup> Brown et al suggested that the use of pencil point needle may reduce the risk of introduction of viral material into the CNS and regional anaesthesia should be performed at a level where no skin lesions are present.<sup>[11]</sup> Dave et al reported a case where a primigravida with chicken pox was posted for emergency caesarean section. Spinal anaesthesia was avoided due to extensive skin lesions on the back and caesarean section was performed under general anaesthesia.

In varicella infected patients general anaesthesia is associated with pneumonia and decrease in the immune function response postoperatively. Nitrous oxide and inhalational agents like halothane, isoflurane, sevoflurane have all been implicated. So if general anaesthesia has to be

used then avoid inhalational agents by use of opioids, muscle relaxants and 100% oxygen.<sup>[7]</sup>

The anaesthesiologist and any person handling the case must exercise caution. A live attenuated vaccine is routinely recommended for all susceptible health workers and is the preferred method for preventing varicella in health care settings. The efficacy of the varicella vaccine is 70-80% in adult and higher in children. Susceptible pregnant women should be offered the vaccine immediately after delivery and secure contraception is indicated for a minimum of one month after the second dose of vaccination.

### **CONCLUSION**

We conclude that both regional as well as general anaesthesia can be used but risks and benefits of each technique should be considered carefully.

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