J Cases Obstet Gynecol, 2017;4(1):11-14

Case Report

Varicella infections during pregnancy and literature review: A case report

Mehmet Kulhan[1,*], Nur Gozde Kulhan[1], Umit Arslan Nayki[1], Cenk Nayki[1], Pasa Ulug[1]

[1]Erzincan University Medical Faculty, Gynaecology and Obstetrics Department, Erzincan, Turkey

Abstract

Chickenpox (caused by varicella zoster virus-VZV) is a viral infection which courses with specific vesicular skin lesions. VZV during pregnancy is very important due to possibility of maternal varicella pneumonia, congenital varicella syndrome or neonatal varicella infection which can course with 30 % mortality risk. Antiviral treatment, and varicella immunoglobulin therapy (VZIG) reported to be effective in decreasing morbidity and mortality rates. This article discusses monitorisa¬tion and treatment of VZV infection in a patient diagnosed In the 18th week of pregnancy before birth with assisting literature.

Key Words:

Chickenpox, varicella, pregnancy, varicella zoster immunoglobulin

Introduction

Varicella infection is a common infectious disease characterized by itchy, macular papules, vesicles, pustules and dry skin caused by Varicella-Zoster Virus (VZV) in childhood [1]. Varicella infection constitutes a great risk for the fetus in pregnant women. This infection is presented in three ways as congenital varicella syndrome, perinatal varicella and neonatal varicella infection. Varicella infections cause spontaneous abortions or congenital varicella syndrome characterized by hypoplastic limbs, zosteriform skin scars, microphthalmia, cataracts, chorioretinitis and central nervous system anomalies in the first 3 months of pregnancy [2]. The highest mortality of congenital varicella is reported as 2-5% in the first 20 weeks of pregnancy [3]. Fetal skin lesions, extremity development defects or unilateral eye anomalies may be seen in the late gastational period [4]. This article discusses monitorisa¬tion and treatment of VZV infection in a patient diagnosed antenatally at the 18th week of gestation.

Article History:
Received: 07/04/2016
Accepted: 01/12/2016

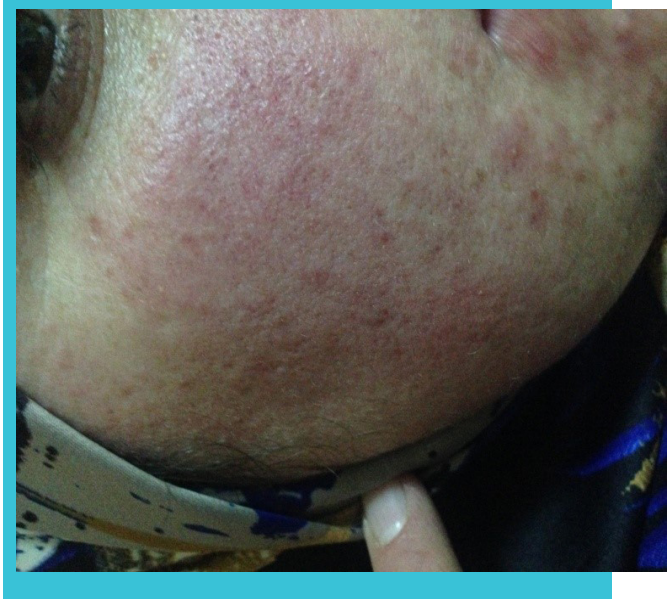
***Correspondence:** Mehmet Kulhan
Address: Yavuz Selim Mah. 182. Sok. No: 7 D:6 Erzincan, TURKEY
Tel: +90 446 2122216
Fax:+90 446 2122211
E-mail: mehmet_kulhan@yahoo.com

Case Presentation

A 32-year-old woman (gravida 3, parity 2) with 18 weeks of gestation applied to our clinic with complaints of itchy, vesicular lesions on her body. During general physical examination, pruritic, erythematous, small, round and widely vesicular lesions have been watched in her abdominal skin and face (Figures 1,2). Patient's eruptions began about 12 hours before the application of hospital. It was learned that she did not contact anyone with rash within two weeks. Dermatology consultation due to patient was diagnosed with chicken

pox by the characteristic lesions. Due to the risk of infection patient was isolated. Acyclovir 5x800 mg and varicella-zoster immune globulin (VariZIG) 125 units/10 kg body weight were started for 10 days at the suggestion of the clinic of infectious diseases. Fetal biometry consistent with gestational age and the amount of amniotic index was normal, gross fetal abnormalities (microcephaly, limb hypoplasia, intrauterine growth retardation) were'nt observed in obstetrical ultrasonography. Ultrasonographic examination was repeated at 22 to 24 weeks of gestation and no fetal abnormalities have been observed. Varicella serology tests of the patient were positive but there was no any evidence suggesting congenital varicella syndrome in ultrasound, so amniotic fluid varicella DNA test has not been performed. Two weeks after the treatment, clinical improvement was observed and patient was followed for 2 week intervals. It'snt observed any problems during follow-up. Uterine contractions started at week 36 of follow-up and the patient's amniotic membrane spontaneously opened. Dark Meconium was observed in the amniotic fluid. Bishop score was 4. Because of loss of variability and late decelerations monitoring in nonstres test (NST) she was delivered by cesarean section for fetal distress. A female fetus weighing 2870 grams was delivered with first minute apgar score of 7 and fifth minute apgar score of 9.

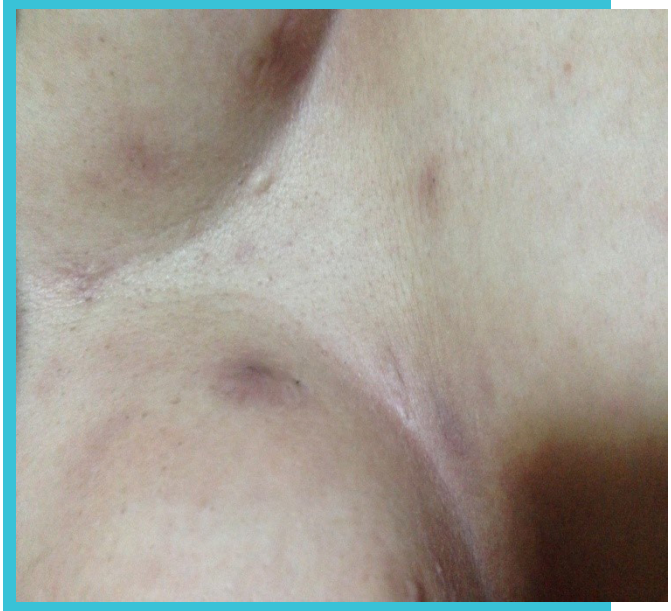
Figure 1.



Erythematous vesicular lesions watched in face

Physical examination of the newborn has not revealed any findings suggesting varicella pneumonia and patient was discharged on the 3rd postoperative day. Newborn was taken to pediatrics intensive care unit on the suggestion of pediatrics clinic. Newborn followed for fourteen days and it was not detected any pathology and so newborn was discharged. Outpatient follow-up to the 30th day of the newborn, maternal postpartum clinic follow-up was carried out for 10 days, it revealed no abnormal findings.

Figure 2.



Small, round and widely vesicular lesions watched in abdominal skin

Discussion

The incidence of varicella is reported as 1/2000 [1]. The antenatal varicella infection is associated with serious complications for mother and fetus. Transplacental transmission rate to fetus is 25-50% during pregnancy [2]. The incidence of congenital varicella syndrome due to varicella infection during the first 20 weeks of pregnancy is 0.91%, but it was'nt observed after 28 weeks [5]. The rates of skin

lesions, extremity hypoplasia, nervous system anomalies such as cortical atrophy, microcephaly, mental reterdation, eye anomalies such as microphthalmia, cataract, chorioretinitis, muscle hypoplasia, gastrointestinal, genitourinary and cardiovascular system anomalies and developmental retardation are reported as 70%, 46-72% , 48-62% , 44-52%, 7-24% respectively in congenital varicella syndrome [6,7,8]. Most of the mothers who have babies born with this syndrome have been infected between 8-20 week of pregnancy. Embryopathy rates were approximately 2% in the retrospective cohort studies [9,10]. In these studies, congenital varicella syndrome was observed between 20-28 weeks of pregnancy but it was not reported after 28 weeks. The diagnosis of varicella infection can be made by characteristic skin rash. VZV specific IgM antibodies can be detected after 3 days following the onset of symptoms in infected pregnancies. In addition, virus isolation, detection of virus antigens or virus DNA can be diagnosed by looking at VZV antibody or virus DNA in amniotic fluid in the prenatal period. Antiviral therapy may be given alone or in combination with VZIG in cases of varicella infection in pregnancy [11]. Acyclovir can inhibit viral replication and transplacental migration of VZV during viraemia [12]. It was reported that complications such as fever and pneumonia were seen more rarely, feto-maternal morbidity and mortality were reduced with the start of treatment in the first 24 hours [13]. Fetomaternal complications are decreased with acyclovir treatment applied within 24-72 hours after the lesions appear. Oral acyclovir 5x800 mg or valaciclovir 3x1 g may be given to these patients for 7 days [14]. In our clinic, the patient was given acyclovir treatment for the first 24 hours. Varicella Zoster Immunoglobulin (VZIG) is recommended for patients with immunodeficiency, pregnant and newborns who are associated with pregnancy [15]. IVIG can be used if VZIG is not available. Using VZIG or IVIG, the reported 30% infection could be reduced to 7% in the perinatal period [16]. There is no VZIG in our country but VZIG imported from abroad for another patient with previous varicella infection could be used in this patient. Breathing and contact isolation is recommended for neonates born from the mother infected with varicella. It is also not known if the virus will infect the baby receiving the breast milk. In a study of nursing mothers and their babies who fed their children with mother's milk, no evidence of transmission was found [17]. For this reason, respiratory and contact isolation has been recommended but it is suggested that the mother should continue to breast-feeding. After maternal infection, the risk of congenital varicella syndrome can be estimated using polymerase chain reaction (PCR) testing of fetal blood or amniotic fluid for VZV DNA, in conjunction with ultrasonography for detection of structural fetal abnormalities. Antiviral therapy with acyclovir in nonpregnant adults improves skin healing and the duration of fever, if initiated within 24 hours of symptom onset. There are no data to suggest that acyclovir prevents the development of complicated infection. A large prospective registry of acyclovir-exposed pregnancies suggested that acyclovir is not teratogenic, although large controlled trials have not been performed. We suggest oral acyclovir for pregnant women with uncomplicated varicella. Postexposure prophylaxis is targeted to susceptible pregnant women (eg, those without a history of varicella or those who are seronegative) who have had a significant exposure to a person with varicella or zoster. Since many women have serologic evidence of past infection, it appears cost-effective to serologically screen prior to prophylaxis, when feasible.

Acknowledgement
None

Declaration of Interest
None

References

1. Gershon AA, Larussa P. Varicella-Zoster virus infections, In: Katz SL, Gershon A, Hotez PJ (eds.) Krugman's Infectious Disease of Children (10th ed.). Mosby-Year Book, Missouri. 1998:620-50.
2. Gershon AA. Chickenpox, measles and mumps, In: Remington JS, Klein JO (eds), Infectious diseases of the fetus and new-born infant. WB Saunders Co., Philadelphia, 1995:565-618.
3. Seçmeer G, Karna G. İntrauterin enfeksiyonların tanı ve tedavisi, İçinde: Yurdakök M, Çoşkun T (eds). Pediatri Yeni Bilgiler, Yeni Görüşler. Güneş Kitabevi, Ankara, 1995, 191-206.
4. Gotoff SP.Infections of the neonatal infants, Unique aspects of infection. Epidemiology immunity, and pathogenesis. In: Behrman RE, Kliegman RM, Jenson HB (eds). Textbook of Pediatrics (15th ed.) WB Saunders, Philadelphia. 2000:538-51.
5. Tan MP, Koren G. Chickenpox in pregnancy: revisi-ted. Reprod Toxicol 2006;21(4):410-20.
6. Enders G, miller E. Varicella and herpes zoster in pregnancy and the newborn. In: Arvin AM, Gershon AA, editors. Varicella-Zoster Virus Virology and Clinical Mangement. Cambridge University Press; 2000; pp.317-47.
7. Cotlier E.Congenital varicella cataract 1. Am J Ophthalmol 1978;86(5):627-9.PMid:717518
8. Scheffer IE, Baraitser m, Brett Em. Severe micro-cephaly associated with congenital varicella infection 1. Dev Med Child Neurol1991;33(10):916-20.
9. Andreou A, Basiakos H, Hatzikoumi I, Lazarides A. Fetal varicella syndrome with manifestations limited to the eye 1. Am J Perinatol1995;12(5):347-8
10. Paryani SG, Arvin Am. Intrauterin infection with varicella zoster virus aftermaternal varisella. N Engl J Med 1986;314:1542-6
11. Huang YC, Lin TY, Lin YJ, Lien RI, Chou YH. Prophylaxis of intravenous immunoglobulin and acy-clovir in perinatal varicella. Eur J Pediatr 2001;160(2): 91-4.
12. Ogilvie mm. Antiviral prophylaxis and treatment in chickenpox. A review prepared for the UK Advisory Group on Chickenpox on behalf of the British Society for the Study of Infection. J Infect1998;36 (Suppl 1):31-8.
13. Gershon AA, Larussa P.Varicella-Zoster virus infec-tions, In: Katz SL, Gershon A, Hotez PJ (eds.) Krugman's Infectious Disease of Children (10th ed.), Mosby-Year Book, Missouri 1998:620-50.
14. Gardella C, Brown ZA.Managing varicella zoster infection in pregnancy. Cleve Clin J Med 2007;74(4): 290-6.
15. McCarter-Spaulding DE. Varicella infection in pregnancy, J Obstet Gynecol Neonatal Nurs2001;30:667-73.
16. Meyers JD.Congenital varicella in term infants: risk reconsi-dered, J Infect Dis1974;129:215-7.
17. American Academy of Pediatrics. Varicella-zoster infections. In: Pickering LK (eds). 2006 Red Book: Report of the Committee on Infectious Diseases (27th ed). Elk Groove Village, IL American Academy of Pediatrics, 2006:741-56.