

## Case Report

# Coagulopathy secondary to chicken pox: a case report

Harharpreet Kaur\*, Gurinder Mohan, Harsehaj Singh, Gurraj Singh, Anusha

Department of Medicine, SGRD Medical College Amritsar, Punjab India

**Received:** 22 August 2017

**Accepted:** 14 October 2017

**\*Correspondence:**

Dr. Harharpreet Kaur,

E-mail: [dr.harharpreet@gmail.com](mailto:dr.harharpreet@gmail.com)

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

### ABSTRACT

Chickenpox often produces a self-limiting disease in children and adolescents. The clinical course is usually mild and complications are rare. The complications that are known to be associated with it are pneumonia, meningitis, myocarditis and nephritis. Severe and disseminated varicella infection with organ dysfunction can also be seen amongst diabetics and immunocompromised patients. However, it is not commonly known that varicella can be life threatening even in immunocompetent adult patients. We present a case of a healthy adult male in which this infection progressed to malignant hemorrhagic disease associated with coagulopathy.

**Keywords:** Chicken pox, Coagulopathy, Healthy adults

### INTRODUCTION

Varicella zoster virus (VZV) is known to produce a benign self-limiting exanthematous illness in the pediatric population.<sup>1</sup> Males (both boys and men) have a higher risk for a severe infection. Central nervous system complications, visceral dissemination, pneumonitis and myocarditis and nephritis are the major viral complications.<sup>2</sup> Disseminated intravascular (DIC) or consumption coagulopathy has been well documented in children and adults with bacterial septicemia but infrequently reported in viral disease. In some previous studies fibrin thrombi have been described with the malignant form of varicella zoster virus infections.<sup>3</sup> Thrombocytopenia during acute varicella associated with bleeding into skin lesions and visceral hemorrhage with a risk for progression to disseminated intravascular coagulopathy have also been noted by some researchers.<sup>4</sup> Hemorrhagic complications of varicella are rare in otherwise healthy children with varicella, but adults are at higher risk.<sup>5</sup> We present a case of a healthy adult male who developed a fulminant illness with haemorrhagic rash and severe bleeding.

### CASE REPORT

Our patient was a 32-year-old male who presented in emergency room with the complaint of pain in the abdomen, vomiting, fever and rash all over body for the past 3 days. The skin lesions which were initially erythematous and papular were soon transformed into dark itchy hemorrhagic vesicles from which blood was oozing. Ecchymotic lesions were also present over the arms. The patient had been having continuous haematuria and haemetemesis for the past six hours prior to admission. There was a history of contact with a family member who had proven chickenpox infection. The patient was not a diabetic or a drug addict and was not apparently immunocompromised. He was fully conscious the vitals being normal on presentation.

Investigation reports were as follows- Hb -8 g, TLC - 22000, DLC 74/23/2/1- Platelet count - 70,000, PTI - 38%, aPTT-100secs, RBS-108 mg, S creatinine 2.5 mg/dL, S bilirubin= 1.3mg/dL, ALP - 236, SGOT- 1700, SGPT - 890, Urine examination-normal. Dengue serology and other viral markers were negative. Blood picture

showed evidence of disseminated intravascular coagulation. D-dimers were 2000µg/ml. The patient was diagnosed as having malignant hemorrhagic chickenpox with secondary infection, coagulopathy, varicella hepatitis, nephritis with thrombocytopenia.

The patient was administered fresh frozen plasma, whole blood and intravenous acyclovir but succumbed early morning next day despite supportive and intensive care due to massive bleeding secondary to coagulopathy.

## DISCUSSION

Acute varicella zoster virus (VZV) infection, or chickenpox, is still perceived by many as a mild infection of childhood. However, it is increasingly common in adults and adolescents who together with immunosuppressed individuals are at a high risk of severe infection with involvement of different organ systems.<sup>6</sup> It is generally more severe in adult men than in women or children. Pregnant women, smokers, old people with a weak immune system, people with HIV, those on steroids and chemotherapy are more vulnerable. Such patients may develop disseminated or malignant varicella infection with multiple organ dysfunction which entails a high morbidity.

Thrombocytopenia and purpura secondary to VZV infection have been described in many patients. Hemorrhagic complications are more common in the immunocompromised populations although healthy children and adults can be affected.<sup>7</sup> Infection in otherwise healthy adults tends to be more severe. Five major clinical syndromes have been described: Febrile purpura, malignant chickenpox with purpura, postinfectious purpura, purpura fulminans and anaphylactoid purpura. These syndromes have variable courses, with febrile purpura being the most benign and having an uncomplicated outcome. In contrast, malignant chickenpox with purpura is a grave clinical condition that has a mortality exceeding 70%. The etiology of these hemorrhagic chickenpox syndromes is not known, although an autoimmune pathophysiologic mechanism has been implicated. Protein S deficiency secondary to varicella complicated by thrombotic and vascular events namely purpura fulminans and necrotic vasculitis, deep vein thrombosis and stroke has been reported.<sup>8,9</sup>

Besides the hemorrhagic skin lesions, hemorrhagic complications like bleeding gums, hemoptysis, pulmonary and gastrointestinal bleeding, intra-cerebral haemorrhage, disseminated intravascular coagulation have been infrequently reported in children when it is called hemorrhagic chicken pox.<sup>3</sup> There have been very few case reports in healthy immunocompetent adults.<sup>10-12</sup>

Our patient who was as per the history immunocompetent presented with rash as described for haemorrhagic chickenpox all over the body along with persistent haematuria and haemetemesis. There was also bleeding

from the endotracheal tube at the time of death. The coagulation profile showed gross derangement possibly due to DIC syndrome. In addition, liver and renal functions were deranged pointing to the involvement of these organs. The clinical course in our case was very fulminant. The patient succumbed in less than twenty-four hours after admission.

## CONCLUSION

Prompt initiation of anti-viral treatment, being vigilant regarding varicella infections in immunocompromised patients as well as healthy adults and intensive care are fundamental to success in managing fulminant chickenpox patients. Susceptible patients should take necessary precautions to prevent acquiring the disease and also to seek medical help early in case of infection.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: Not Required*

## REFERENCES

1. Cvjetković D, Pobor M, Brkić. Primary infection with varicella-zoster virus in risk groups. *Med Pregl.* 1998;51(3-4):151-4.
2. Chickenpox (Varicella) Complications. *cdc.gov.* 16 November 2011.
3. James J, Watkins L. Hemorrhagic chickenpox associated with disseminated intravascular coagulation *Pediatric Research.* (1971);5,404-5.
4. Arvin, A. M "Varicella-Zoster Virus," *Clinical Microbiology Review.* 1996,9(3):361-81.
5. Dinleyici E, Kurugol C, Turel Z. "The Epidemiology and Economic Impact of Varicella-related Hospitalizations in Turkey from 2008 to 2010: A Nationwide Survey during the Pre-Vaccine Era (VARICOMP Study)," *Europ. J Pediatr.* 2012;171(5):817-25.
6. Tunbridge AJ, Breuer J, Jeffery KJ. "Chickenpox in adults - clinical management". *J Infect.* 2008; 57(2):95-102.
7. Hollenstein U, Thalhammer F, Burgmann H. Disseminated intravascular coagulation (DIC) and rhabdomyolysis in fulminant varicella infection--case report and review of the literature. *Infection.* 1998;26(5):306-8.
8. Nguyễn P, Reynaud J, Pouzol P, Munzer M, Richard O, François P. Varicella and thrombotic complications associated with transient protein C and protein S deficiencies in children. *Eur J Pediatr.* 1994;153:646-9.
9. Kurugöl Z, Vardar F, Ozkinay F, Kavakli K, Ozkinay C. Lupus anticoagulant and protein S deficiency in otherwise healthy children with acute varicella infection. *Acta Paediatr.* 2000;89(10):1186-9.
10. Ahamed S, Balkhair A, Krishnan R. Fulminant Varicella Zoster Infection with Multiorgan

Involvement-A Case Report. Sultan Qaboos Univ Med J. 2008;8(3):339-43.

11. Miller HC, Stephan M. Hemorrhagic varicella: a case report and review of the complications of varicella in children. Am J Emerg Med. 1993;11(6):633-8.
12. De Vas Goonewardane, APN. Malignant chickenpox with coagulopathy in a healthy adult

female; a case report and review of literature. Galle Medic J. 2016;20(2),46-7.

**Cite this article as:** Kaur H, Mohan G, Singh H Anusha. Coagulopathy secondary to chicken pox- A case report Int J Adv Med 2017;4:1706-8.