

Varicella-Zoster Infection with Secondary Bacteremia and Extensive Facial Abscesses

Kian-Guan Lee, MRCP (UK)*, Mei-Chih Cheng, MBBS**

*Singapore General Hospital, Renal Medicine, Outram Road 169608 Singapore, **Department of Internal Medicine, Penang General Hospital, Malaysia

SUMMARY

Varicella-zoster (chickenpox) infection is a common infectious disease and generally considered to be self-limiting. However, severe bacterial complications associated with the disease have been reported. We describe a case of varicella-zoster infection with secondary *Staphylococcus aureus* bacteremia, preseptal orbital cellulitis and extensive facial abscesses. She was aggressively treated with intravenous antibiotics and repeated surgical drainage, and eventually made good recovery.

INTRODUCTION

Varicella-zoster infection is generally a mild and self-limiting disease, commonly seen in primary care setting. It is known to be associated with increased risk of complications in immunocompromised individuals¹. Nevertheless, severe complications have been reported in previously healthy children, including neurologic, skin and joint involvement, which are associated with considerable morbidity, long-term chronic sequelae or even fatality^{1,2}.

CASE REPORT

A 16-year-old previously healthy girl presented with three-day history of high-grade fever with generalized vesicular rash. She has strong contact history that three of her family members were recently diagnosed chickenpox infection. During the admission, she complained of persistent facial pain, and noted to develop a new onset, unusual facial and left periorbital swelling which was rapidly progressive (Figure 1, panel A). Laboratory investigations showed white cell count of $9 \times 10^9/L$ and platelet count of $137 \times 10^9/L$. Head and orbit computed tomography (CT) scan showed inflammatory changes involving the left preseptal orbit, left parotid gland and bilateral facial regions. She was continued on acyclovir treatment and facial swelling of right side reduced, however noted bulging of forehead and left temporal area which was tender and fluctuant (Figure 1, panel B). Incision was done and moderate amount of frank pus was drained. Multiple bacterial cultures from blood and pus grew methicillin-sensitive *Staphylococcus aureus* and she was given intravenous cloxacillin. A repeat CT scan done five days later however, showed the re-accumulation of abscesses at left temporal and pre-auricular area and she underwent another surgical drainage (Figure 1, panel C). She completed three weeks of intravenous antibiotics and made good recovery upon discharge (Figure 1, panel D).



Fig. 1 : Sequential picture of patient with varicella infection and facial abscesses.

DISCUSSION

The pathogenesis of bacterial infection is thought to be due to skin barrier disruption and possibly transient virus-induced immunosuppression³. Among the reported case series, severe bacterial complications have been shown to be potentially associated with long-term chronic sequelae⁴ or resulted in fatality^{1,2}. In the early presentation of illness, distinguishing an early bacterial sepsis from uncomplicated varicella-zoster infection can be difficult, but it should be considered in the presence of persistent fever after the third day of the illness, or any signs of systemic toxicity². Bacteremia and thrombocytopenia on presentation, which were seen in our patient, were identified as risk factors associated with complicated outcome and deep-seated infection as compared to superficial skin infection³. This case highlights the severity of bacterial sepsis complicating varicella-zoster infection, and importance of early antibiotic treatment and surgical drainage of infective foci to optimize clinical outcome.

REFERENCES

1. Cameron JC, Allan G, Johnston, *et al*. Severe complications of chickenpox in hospitalized children in the UK and Ireland. *Arch Dis Child* 2007; 92: 1062-66.
2. Pollard A, Isaacs A, Lyall EG, *et al*. Potentially lethal bacterial infection associated with varicella zoster virus. *BMJ* 1996; 313: 283-5.
3. Aebi C, Ahmed A, Ramilo O. Bacterial complications of primary varicella in children. *Clin Infect Dis* 1996; 23:698-705.
4. Ziebold C, von Kries R, Lang R, Weigl J, Schmitt HJ. Severe complications of varicella in previously healthy children in germany: a 1-year survey. *Pediatrics* 2001; 108(5): E79.

This article was accepted: 9 August 2012

Corresponding Author: Kian-Guan Lee, Singapore General Hospital, Renal Medicine, Outram Road 169608 Singapore

Email: lee.kian.guan@sgh.com.sg