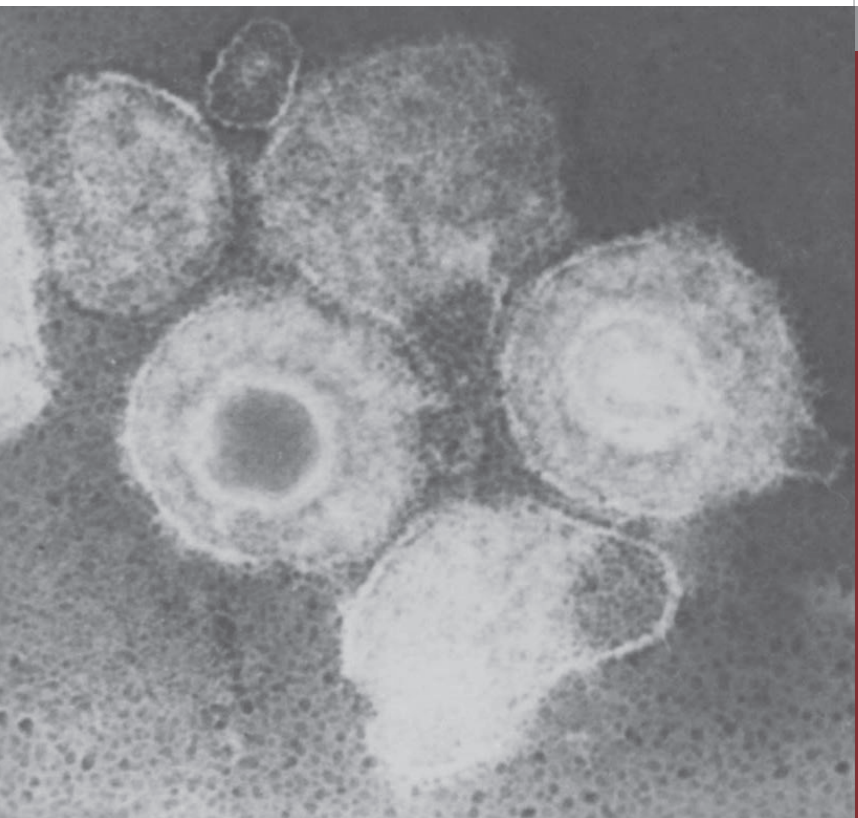
SWISS SOCIETY OF NEONATOLOGY

Perinatal varicella infection



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Source of title image: http://worldofviruses.unl.edu

A 4695 g male infant was born at 40 6/7 weeks of gestation to a 34-year-old G2/P1. The mother, who had been tested negative for varicella zoster virus (VZV) antibodies in early pregnancy, developed chickenpox at 39 2/7 weeks of gestation. She was admitted to a regional hospital, where, although the infection was already apparent, intravenous VZV immunoglobuline was administered. The further clinical course was unremarkable.

At birth, 11 days following the onset of the maternal chickenpox rash, the newborn showed skin lesions suggestive of varicella. He was transferred to our hospital for further treatment. At the time of admission, he was in good general condition, afebrile and showed numerous (count < 50) polymorphic skin lesions consisting of macules, papules and pustules (Fig. 1). Antiviral treatment with aciclovir 30 mg/kg/d i.v. was initiated. After an uncomplicated clinical course with crusting of all the skin lesions within 5 days the infant was discharged home.

At the age of 13 days, the parents noticed a swollen area over the sternum. The child was afebrile, in good general condition, with a 1.5 cm x 4 cm cystic, slightly erythemous protuberance over the cranial part of the sternum (Fig. 2). Blood tests on admission showed a C-reactive protein of 51 mg/l and a white blood cell count of 24,1 G/l without left shift. The urine contained leucocytes and bacteria. During evaluation with conventio-

nal X-ray and ultrasound, a vascular malformation and hematoma were considered in the differential diagnosis. But given her history, an abscess was thought to be the most propable diagnosis. The CT findings (Fig. 3) subsequently confirmed this hypothesis. The abscess was incised by a pediatric surgeon and antibiotic treatment with gentamicin and amoxicillin/clavulanate was administered. Under this treatment the infant recovered without any complications and was dismissed after 17 days. Staphylococcus aureus was cultured from the abscess as well as from urine and conjunctival secretions. Blood cultures remained negative.

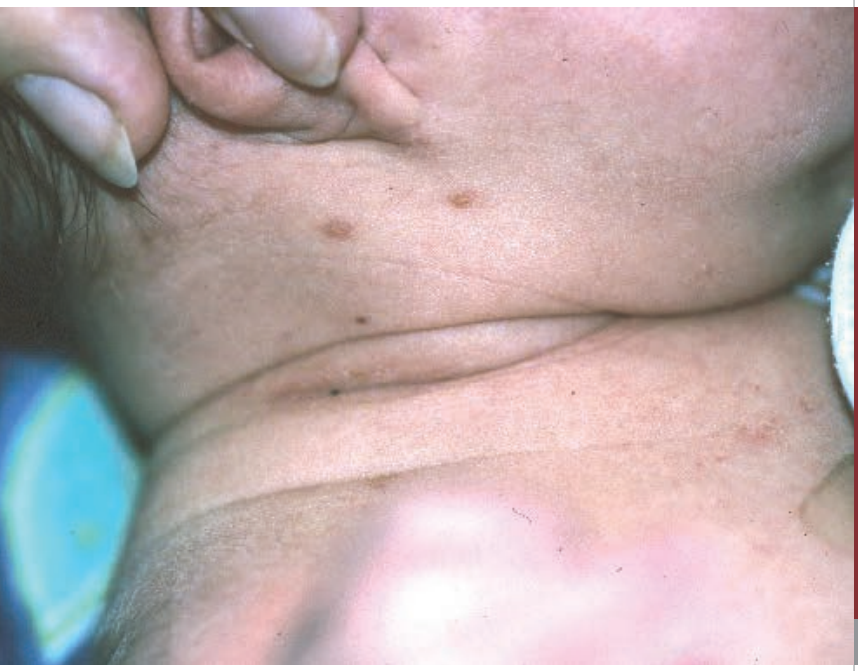

Fig. 1

Skin rash on admission (DOL 1).

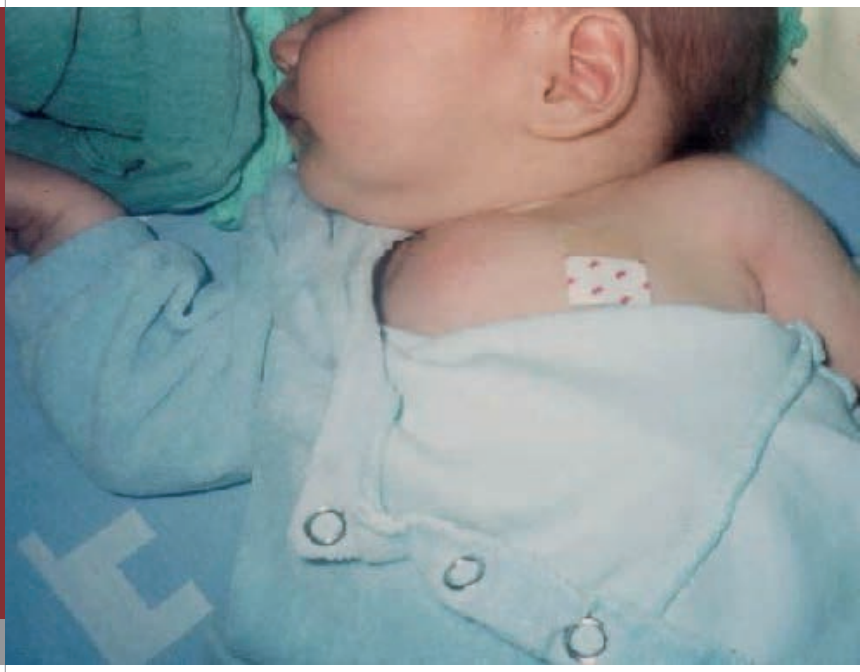

Fig. 2

Swelling over sternum (DOL 13).

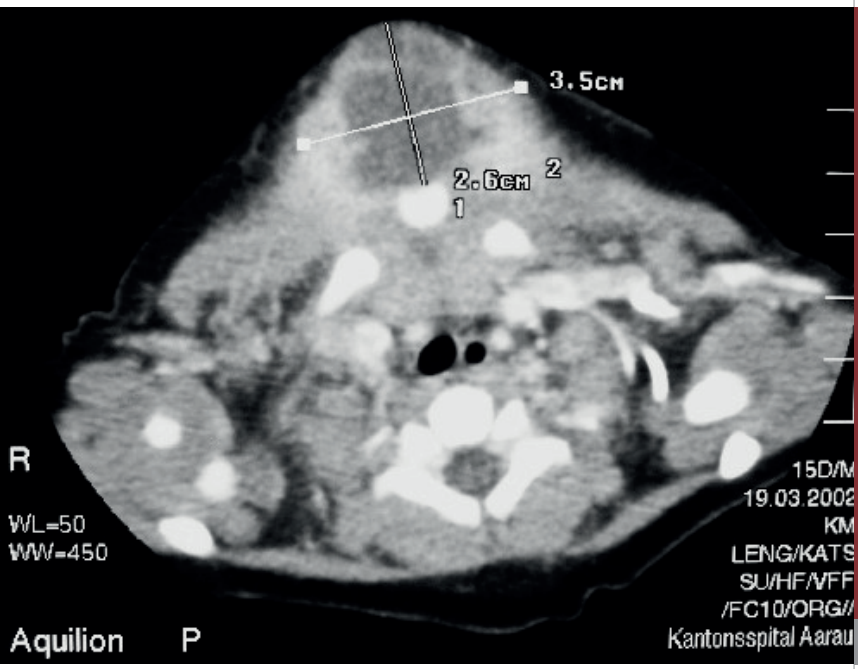

Fig. 3

CT with contrast showing abcess formation (DOL 13).

DISCUSSION

Secondary bacterial infection is known to be the most common complication of VZV infection in children (1-4). The clinical spectrum is wide, including simple skin infection, soft tissue infection (erysipelas, soft tissue abscess, pyomyositis), osteomyelitis or invasive infection (septicemia, necrotizing fasciitis, toxic shock syndrome). The latter are rare, but well recognized to cause potentially lethal diseases. Group A beta-hemolytic Streptococcus or Staphylococcus aureus are the predominant microbiological agents (1,4). In our case, the positive finding of Staphylococcus aureus in urine and conjunctival cultures may have been the result of bacteremia. Nevertheless the blood cultures taken at the time of admission were negative. The delay of approximately 2 weeks between onset of chickenpox rash and secondary bacterial infection in our infant is not uncommon. In the literature, the time intervall is considered to range from 2 days to 2 weeks (4).

Concerning the management of perinatal varicella infection, VZV-specific immunoglobuline (Varitect®) plays an important role. Nevertheless, its use is limited to the following scenarios: mothers after significant contact with VZV during pregnancy and newborns whose mothers develop chickenpox rash between 5 days before and 2 days after delivery (recent investigations recommend an extension of this high risk period to an intervall of 7 days before and 5 days after delivery) (5,6). In both cases, Varitect® should be administered within 72-96 hours after contact or after birth.

It is not effective after the onset of disease. In our case, such prophylactic treatment was neither indicated for the mother nor for the child.

The second drug available for the management of perinatal varicella is acyclovir. Its therapeutic use is well known and recommended for severe varicella infection of the neonate. Due to the fact that the benefit of acyclovir therapy is highest when the drug is administered as soon as possible after the onset of disease (normally within 24 hours), and as it is not easy to assess severity at the beginning of the disease, some authors recommend initiating intravenous acyclovir therapy for any neonate with manifest chickenpox (7,8). In our patient, the time intervall from onset of varicella rash and start of aciclovir therapy was possibly more than 24 hours, therefore the therapeutic effect remains uncertain. However, the clinical course was mild.

There are only few reports concerning the prophylactic use of acyclovir in neonates and pregnant women. It has been shown that acyclovir may prevent or modify disease in older children after contact with VZV, when given at the time of second viremia 7-9 days after the onset of rash in the index case (7). A recent study by Huang et al. demonstrated effectiveness of aciclovir prophylaxis in preventing disease in neonates whose mothers had developed chickenpox within 7 days before and 5 days after delivery (6). Other authors

recommend acyclovir for prophylactic treatment of pregnant women who have had contact with VZV and who have particular risk factors for severe disease (9). Nevertheless, further investigations with larger groups of patients are necessary before recommending such treatment for routine use.

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