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Letters to the Editor

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Dear Editor,

EARLY ONSET NEONATAL SEROGROUP B MENINGOCOCCAL MENINGITIS AND SEPTICAEMIA

A male baby age 7 days presented to the Emergency Department with an 11-h history of reduced feeding. He was afebrile but had a petechial rash, lethargy and poor perfusion. He was born by uncomplicated, term vaginal delivery and went home at 5 days of age with his parents and a fully immunised 2-year-old sister. There were no reports of contacts with unwell persons, and there was no household overcrowding. The number of visitors to the baby in the preceding days was not recorded.

The neonate was resuscitated with intravenous fluids, and cefotaxime, penicillin and gentamicin were administered. He improved somewhat following fluid administration and proceeded to a full septic screen when stable.

Investigations revealed a normal full blood count, coagulation profile, electrolytes and C-reactive protein. Urine showed a high specific gravity (>1.03) indicative of dehydration, with the final negative culture. Cerebrospinal fluid contained 1×10^6/L leucocytes, 371×10^6/L erythrocytes, protein 1.06 g/L and glucose 2.2 mmol/L (blood glucose 3.2 mmol/L). Nasopharyngeal aspirate was negative, and the chest X-ray was normal.

Due to the infant's state on presentation, the paediatric team decided to arrange early transfer to a tertiary centre for likely intensive care management. However, while awaiting the arrival of the transfer team, the baby developed irregular breathing, prolonged apnoeas and finally cardiorespiratory arrest. The presence of disseminated intravascular coagulation complicated intubation and ventilation. Bleeding caused recurrent obstruction of the endotracheal tube, requiring multiple suctioning and re-intubation. The baby died despite prolonged cardiopulmonary resuscitation. Cerebrospinal fluid and blood cultures both grew *Neisseria meningitidis* serogroup B.

Family members and exposed staff members were provided with antibiotic prophylaxis immediately following the decease of the infant.

Only 11 cases of early neonatal meningococcal disease (<7 days) have been reported, with an age range of 1 to 4 days. Five neonates died as a result of their infection. None of the 11 cases was reported as serogroup B *Neisseria meningitidis*. Our patient is the youngest case with serogroup B disease in the medical literature.[1] Very few neonates present with the classic signs and symptoms of meningococcal disease,[2] presumably as the neonatal immature immune system is unable to mount this form of vascular inflammation.[3]

The rarity of meningococcal disease in neonates is believed to be attributed to protective transplacental bactericidal antibodies at birth, with levels decreasing until 18–24 months of age,[4] and low rates of nasopharyngeal colonisation.[5]

Conflict of interest: None declared.

In Australia, both monovalent conjugate (covering serotype C) and multivalent polysaccharide and conjugate (covering serotypes A, C, W135 and Y) vaccines are available. The serotype C conjugate vaccine forms part of the National Immunisation Program, given routinely at 12 months of age. The duration of immunity is as yet uncertain but appears to be improved by administering the first dose after the first birthday. Quadrivalent vaccines are recommended for high-risk groups, such as travellers to endemic areas, and have shown poor responsiveness in young children: immunity further reduces over the 3 years subsequent to vaccination.[6]

Intense efforts are being made to develop a meningococcal serotype B vaccine, and several promising avenues are being explored. The challenge with the B serotype lies in its structure – the polysaccharide capsule is an autoantigen, expressed in multiple human tissues (including developing neural tissue), and is poorly immunogenic.[7]

While we are now able to prevent meningococcal A, C, W-135 and Y disease through immunisation, to date we have no available serogroup B vaccine (though there are candidates), and its arrival cannot come soon enough.

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