Bulging fontanelle in a febrile 9-month-old girl

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A previously healthy 9-month-old girl was referred to our emergency department from a local pediatric clinic for evaluation of a bulging fontanelle. She had a 2-day history of fever, and her mother had noticed the bulging fontanelle on the day of presentation. She had no vomiting, seizures, or poor feeding. Her development was normal for her age, and she was up to date on her immunizations, including 3 doses of pneumococcal vaccine 13-valent and *Hemophilus influenzae* type B conjugate vaccine.

The patient was fully alert, appearing well and smiling during our assessment. We recorded a temperature of 38.8°C, with a heart rate of 144 beats/min, respiratory rate of 44/min, and oxygen saturation of 98% on room air; other than temperature, these findings were within normal ranges for her age. She was able to pull herself up to stand as usual. Her anterior fontanelle was soft and bulging when she sat upright (Figure 1A). We did not observe any neck stiffness, hemiparesis, ocular motor cranial nerve palsy, or pupil abnormalities on our physical examination. Transfontanelle ultrasonography revealed no hydrocephalus. Given the reassuring features of her clinical history and physical exam, we did not conduct any further investigations. We provided instructions to her mother to have the baby reassessed in the emergency department immediately if she became lethargic, reduced oral intake, or vomited. Two days later, she defervesced and developed a confluent erythematous rash on her abdomen, which confirmed the diagnosis of roseola infantum (Figure 1B). Twelve days after the first presentation, her fontanelle had returned to normal.

Roseola infantum is a benign cause of bulging fontanelle.[1] The critical differential diagnoses of bulging fontanelle include bacterial meningitis, intracranial hemorrhage, and brain tumour.[2,3] Although most cases of bulging fontanelle in febrile infants are caused by self-limiting viral infections,[2,3] a thorough assessment for signs to suggest life-threatening conditions is necessary. For our patient, we considered blood work, lumbar puncture, and computed tomography scan of the brain to be unnecessary, given the absence of other signs to suggest intracranial hypertension or infection, such as vomiting, seizure, or meningeal signs.

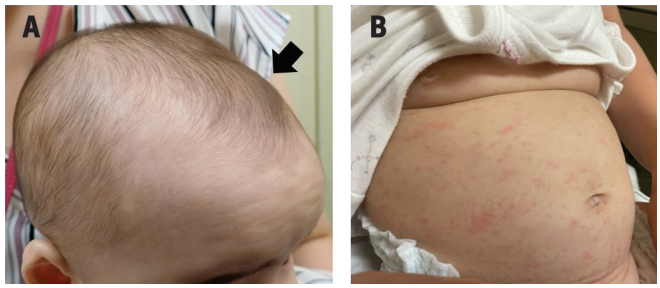

Figure 1: (A) The bulging anterior fontanelle (arrow) of a 9-month-old girl with roseola infantum. (B) A confluent, erythematous rash appeared on her abdomen 2 days after her presentation to the hospital with fever and bulging fontanelle.

References

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