

## LETTERS

## Bulging fontanelle in febrile infants: lumbar puncture is mandatory

We read with interest the study by Shacham *et al.*<sup>1</sup> Out of 153 children with fever and bulging fontanelle, only one child had bacterial meningitis. However, we disagree with their suggestion of withholding lumbar puncture in this group of children. In their cohort, 41 out of 153 children had aseptic meningitis; however, cerebrospinal fluid (CSF) viral cultures and PCR studies were only done in children who have received antibiotics and had an abnormal CSF chemistry. These cases would have been easily missed and not diagnosed without a lumbar puncture (LP).

Exclusion of meningitis in infants is often very difficult even for an experienced physician as clinical signs are non-specific. Bulging fontanelle in an infant can be a sign of raised intracranial pressure, and exclusion of central nervous system (CNS) infection in a child with fever is paramount. Although it can be due to minor non-specific illnesses, serious and potentially treatable causes must be excluded.

The use of LP has declined over the years in the UK.<sup>2</sup> In a study by Kneen *et al.*,<sup>3</sup> only 53% of children had lumbar puncture when it was clinically indicated. CSF findings helped in the management of 72% of these patients, either by identifying a causative organism or excluding meningitis. CSF leucocyte count, type of leucocytosis, culture positivity and the diagnosis of meningitis depend on several factors, which include timing of LP, duration and type of antibiotics, antiviral medications before CSF analysis and the epidemiology of acute meningitis in a specific geographical area.

Although the authors acknowledge several limitations of their study, they fail to realise that the only way to exclude meningitis is by examining the CSF. CNS infections carry high mortality and morbidity especially in those who are untreated or partially treated. Køster-Rasmussen *et al.*<sup>4</sup> found that delay in giving antibiotics was an independent risk factor to unfavourable outcome, with the odds increasing by up to 30% per hour of treatment delay in acute bacterial meningitis. Early LP in an infant with fever and bulging fontanelle, when there are no contraindications for LP, is a more logical approach for the diagnosis and for the appropriate management.

The advantages of obtaining a microbiological diagnosis extend beyond individual patient management. Identifying an organism allows appropriate prophylaxis to be recommended for close contacts and public health service monitoring for disease outbreaks. Finally, there is a potential health and economic implication with reduced antibiotic and antiviral use, along with shorter hospital stay for children in whom CNS infection has been completely excluded.

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