

Correspondence

When not to do a lumbar puncture

Sir,

Although an important point is made that a lumbar puncture may not be the essential first investigation for a very sick child who may have meningitis, I think there are some points in Dr Addy's annotation which deserve further discussion.¹ I think it is unfortunate to use the word 'assault' about this investigation. Also the fact that cerebral oedema and 'coning' are quite commonly found in children dying of meningitis does not necessarily indicate that lumbar puncture contributed to their death.

There are, I think, three different situations which this annotation is referring to and there are quite different reasons for omitting or deferring a lumbar puncture in each.

(1) In, for example, a child with classical clinical presentation of meningococcal infection a lumbar puncture may be merely unnecessary and could delay, though of course should not, the first dose of antibiotic.

(2) The child may be 'too sick for lumbar puncture.' This, I think, is the main point of the article. I think it may be clearer to say that, for a child in coma, there are priorities in resuscitation and investigation which may cause one to defer a lumbar puncture until problems of underventilation, status epilepticus, circulatory failure, and hyperpyrexia have been dealt with. There can be no doubt that dealing with underventilation and presumed cerebral oedema are much more important. Very often it takes only about half an hour to have either completed the above or at least to have made progress, and a lumbar puncture may then be safely performed. There is absolutely no reason why antibiotics should not be given for presumed meningitis at the outset of resuscitation. If the child's depth of coma warrants this, then intracranial pressure monitoring by an intraventricular drain does, of course, provide cerebrospinal fluid as well.

As an additional point about cause of death, it has been our experience that, in children with overwhelming infection, a major problem has often been failure of adequate cardiac output, which fails to respond to drug treatment or our efforts at minimising the effects of cerebral oedema.

(3) The danger of delay in the diagnosis of other conditions is another consideration. We see a large number of children with conditions which have been suspected of being meningitis, including tumours, abscesses, vascular episodes, and unusual presentations of epilepsy, in which the lumbar puncture is decisive in early referral. One could say that the lumbar puncture was a mistake and that the children would have been better referred for an urgent computed tomogram. I fear, however, that if the habit of not doing a lumbar puncture caught on, that a number of these children's diagnoses would be further delayed.

Reference

- ¹ Addy D. When not to do a lumbar puncture. *Arch Dis Child* 1987;62:873-5.

B G R NEVILLE
Newcomen Centre,
Guy's Hospital,
St Thomas Street,
London SE1 9RT

Sir,

We have followed the correspondence debating the need for lumbar puncture in the diagnosis and management of meningitis with interest, but wish to express our concern regarding the recent annotation on the subject.¹ Nowhere is consideration given to the difficulties surrounding the diagnosis of tuberculous meningitis. In Third World countries tuberculous meningitis remains a commonly encountered form of meningitis in childhood^{2,3} but the diagnosis should be considered at all times in every setting.⁴

Early diagnosis is crucial, as the outcome is determined by the stage of the disease at which treatment is started.⁵ Many children show subtle premonitory symptoms before those of meningitis appear, and the clinician may be astute enough to perform a lumbar puncture at this optimal stage. Other children, however, present acutely with a picture indistinguishable from meningitis due to other causes. Without a knowledge of the results of cerebrospinal fluid examination it is difficult to imagine how the clinician is going to consider the possibility of tuberculous meningitis in the differential diagnosis. A policy of diagnosing meningitis on clinical grounds, initiating meningitis treatment, and awaiting clinical improvement will be disastrous, if not fatal, in the case of this disease.

It is true that in a minority of cases the presence of a strong family history, or a chest radiograph showing pulmonary tuberculous in the presence of typical neurological signs, enables a confident diagnosis to be made. It is also true that when diagnostic uncertainty exists, computed tomography may assist the diagnosis of tuberculous meningitis by showing the characteristic basal exudate and associated hydrocephalus.⁶ In most countries where tuberculous meningitis is a common problem, however, facilities are limited, and even in developed countries a critical period may pass before computed tomography is undertaken.

We would entirely agree that lumbar puncture is both dangerous and unnecessary in a child with meningococcal septicaemia, and in cases with definite signs of raised intracranial pressure. But in developing countries, or in any country where tuberculous meningitis is still encountered, a policy of not carrying out lumbar puncture in cases of meningitis is in our opinion a recipe for disaster.