

The susceptible infant

(answers on page 54)

Part one

John, aged two and a half years, was brought to his district hospital on the Kenyan coast after becoming gradually more ill over 3 days. By the time he reached the clinic, he was prostrate, listless, and his muscles were flaccid; he had a high fever and was dehydrated. There were no focal signs to indicate an area of sepsis. He was from a village 50 miles away, and the visiting nurse who had found him in this state had no background medical notes with which to help make a diagnosis, although his parents had insisted that he had never been ill until now. It was not clear whether or not he had received the usual vaccinations recommended for children in the area. Blood was taken for culture and for a full blood count.

- Q1 What are the likely differential background causes of such severe infection in John's case?**
- HIV.
 - Tuberculosis.
 - Malaria.
 - Sickle cell anaemia.
 - Streptococcus pneumoniae*.
 - Haemophilus influenzae* type B.

Part two

- Q2 If the diagnosis had been bacteraemia complicating sickle cell anaemia, which of the following statements is true of the disease?**
- Bacteraemia is no more common in sickle cell sufferers than in other children.
 - Children with sickle cell disease are protected against infections such as malaria, pneumonia, and salmonella.
 - Sickle cell disease makes children particularly susceptible to bacterial infections.
 - Sickle cell disease is relatively rarer in East Africa than in people of African origin in the United States.

Part three

John's blood culture revealed pneumococci, and he was given the appropriate intravenous antibiotic. Within 48 hours he was almost back to his old cheerful self, and within a week he returned to his home village.

- Q3 What actions were taken to try to ensure that this illness did not return?**
- Vaccination against *H influenzae* type B, diphtheria, tetanus, pertussis, hepatitis B
 - Vaccination against *S pneumoniae*.
 - Prophylactic penicillin – every day.
 - None of the above, as repeated infections are bound to occur and cause the same symptoms.
 - Referral as soon as possible to the local health carers as soon as he begins to feel unwell.
 - Antimalarial prophylaxis.

Part four

- Q4 Which of the following statements are true of sickle cell disease?**
- In some parts of sub-Saharan Africa one in five people carry the gene for it and more than one in a hundred children are born with it.
 - Infection in undiagnosed sickle cell disease kills many infants in the first year of life.
 - If diagnosed at birth and treated accordingly many deaths are avoidable.
 - Infection is a bigger killer in children with sickle cell disease than its haematological complications: thrombotic, anaemic, or haemorrhagic.