

MEDICAL MEMORANDA

Shigella sonnei Septicaemia in a Neonate

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Shigella sonnei septicaemia is a rare condition at any age and especially so in the newborn. Two neonatal cases have been reported from America (Whitfield and Humphries, 1967, Kraybill and Controni, 1968) but since there is no record of its occurrence in Great Britain a fatal infection at or immediately after birth is reported.

Case Report

After an uneventful pregnancy a woman of 24 years was delivered of a normal 6lb 3oz (2,807g) female infant. The baby's condition remained satisfactory for the first 22 hours, then respiratory distress developed followed by gastroenteritis three hours later. Intensive therapy was carried out including the giving of intravenous antibiotics. Transient improvement occurred but the infant died 69 hours after birth.

Initially the mother mentioned a bout of diarrhoea lasting for a week three weeks before delivery. She attributed it to her iron tablets. On further questioning she added that several of her neighbours were also affected.

Twenty-five hours after birth and before starting treatment culture of the baby's blood and stools yielded *Shigella sonnei*. After death this organism was cultured from the jejunum, ileum, colon, and anus as well as from the spleen and one lung. Though cultured several times the mother's stools were positive only once, whereas a 3-year-old sister gave repeated positive cultures for over a fortnight. Stool cultures from the other two inmates of the house, the father and grandmother, were negative. No other cases were notified to the Health Department from the area, though it was felt that the mother's statement that other cases did occur may well have been true as Sonne dysentery is usually a short, mild illness.

At necropsy five and a half hours after death the body weighed 2,640g and was moderately jaundiced. The umbilicus was dry and the cord had separated. The small intestine, bile stained, was markedly dilated but empty. Other organs were entirely normal.

The main lesion was in a microabscess with a few mature polymorphs and mononuclears lying mainly in the epicardial fat but also extending along a septum into the myocardium. In relation to this a small vessel showed necrosis of the wall with an accumulation of inflammatory cells. In the spleen there were the small focal areas of necrosis (fleckmilz), sometimes found in severe Gram-negative infections. In both sections stains failed to show organisms. Search failed to show evidence of infection in the

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viscera or brain or at the umbilical site. The mucosa of the intestine was well preserved and all the glands were exhausted of secretion with occasionally some regeneration of epithelial cells. The mesenteric lymph nodes showed a slight increase in cells with lobed nuclei and an increase in large mononuclear cells, which were distinctly prominent in the distended sinusoids.

Comment

Gram-negative organisms have recently become the main cause of neonatal septicaemia in place of streptococci. Several authors (Silverman and Homan, 1949; Smith *et al.*, 1956; Nyhan and Fousek, 1958) defined rigid criteria for the interpretation of bacteriological data in septicaemia of the newborn, and large series of cases were presented stressing the predominant role of enteric organisms, but no mention was made of *Shigella* septicaemia.

Dysentery due to *S. sonnei* is commonly regarded as a short, mild illness as the mother had here, but Lewis and Claireaux (1951) pointed out that in babies and young children it can give rise to serious illness of sudden onset with convulsions. Others supported this view but Sonne septicaemia was not found until Tatham *et al.*, (1951) reported a positive blood culture in a 2-year-old boy in Great Britain, and Johnston and Sell (1964) reported a similar finding in a 9-month-old infant in America.

Recently two cases of *S. sonnei* septicaemia in the newborn were reported in America, the first by Whitfield and Humphries (1967) had meningitis also, while in the second case (Kraybill and Controni, 1968) the infant had signs of enterocolitis as well as septicaemia. These infants were well for the first two to three days of life, were treated, and survived. A search of the literature has revealed no report of a *S. sonnei* septicaemia occurring in a newborn infant in the U.K. This case may serve as a warning of another potential hazard to the neonate in view of the fatal outcome from the overwhelming infection which became manifest so soon after birth.

The positive blood culture during life might have been due to contamination of the skin, but the epicardial microabscess and the multiple focal necroses in the spleen support a blood invasion.

The short period after birth would be sufficient for the infection to be established postnatally, though it was probably acquired as part of the initial intestinal flora and presumably from the maternal birth passages.

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