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Coxsackievirus type A16 infection in a neonate

Sir,

Coxsackievirus type A16, commonly associated with the characteristic syndrome of hand, foot, and mouth disease, is an unusual infective agent in children under one year of age, particularly in the neonatal period. A short non-specific illness in a newborn baby was shown to be associated with hand, foot, and mouth disease in his mother, and Coxsackievirus type A16 was recovered from both.

Case report

A 3-week-old baby boy was admitted with a 24-hour history of drowsiness and refusing feeds. Delivery had been normal at 35 weeks' gestation after premature rupture of membranes and intermittent labour pains for 10 days. Birthweight was 2.7 kg, and the baby had been nursed in the special care unit for 10 days because of a feeding problem associated with mild jaundice. Breast feeding had been maintained.

He was a well nourished but drowsy and slightly jaundiced infant; temperature 34.6°C; Dextrostix 25mg/100 ml. A full infection screen failed to show any focus of infection, and a provisional diagnosis of cold injury was made. It was found that his mother had been ill for 4 days previously, with a febrile 'flu-like' illness, associated with painful ulceration of her mouth, feet, and hands. Coincidentally with the infant's illness, a sibling also had nonspecific malaise.

Coxsackievirus type A16 was grown in monkey-kidney tissue cultures from maternal throat swab and vesicle fluid, and from the infant's throat swab; the infant's CSF was acellular and sterile.

The infant initially required tube feeding, and was nursed in an incubator until his temperature rose to

normal. He was discharged home clinically well 5 days later.

Coxsackievirus type A16 infections are most commonly associated with hand, foot, and mouth disease, but have also been found in encephalitis, meningitis, myocarditis, and pericarditis. The highest incidence is in the 1- to 3-year-old age group (Gamble, 1962), and the incubation period is short, between 3 and 6 days. The disease is highly contagious, primary cases occurring in children, and spreading horizontally from sibling to sibling, and to parent.

The present case is interesting with regard to the age of the patient and the symptoms, which were relatively mild and atypical. Previously, neonatal infection with this agent has been reported in association with fatal myocarditis (Wright *et al.*, 1963; Golgberg and McAdam, 1965), but neonatal infections are rare, probably because of protection by maternal antibody (Gear, 1958; D. R. Gamble, 1977, personal communication). There are no previous reports of this infection being acquired post-natally from the mother. In this instance breast milk was not examined virologically, which might have shown the route of transmission.

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Bronchodilator drugs and young children

Sir,

In their paper (*Archives*, 1978, **53**, 532), Lenney and Milner concluded that wheezy children under age 18 months did not respond to treatment with nebulised salbutamol, as measured by respiratory resistance or thoracic gas volume. They also quoted two other studies (Radford, 1975; Rutter *et al.*, 1975) which had similar conclusions. All these studies were performed in the recovery stage of an acute attack. In my experience, at the height of an attack, in the most severe stage, two-thirds of infants under one year show improvement in auscultatory findings when treated with nebulised salbutamol or isoetharine (König, 1978). Although no pulmonary function tests were done on infants of this age, there was a significant reduction in respiratory rate and dyspnoea score.

Although there is little doubt that the response of young infants to bronchodilators is less good than that of older children, I think that in the acute stage a substantial number of them do benefit and it is worth a trial.

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Dr Milner and co-workers comment:

We were interested to hear of Dr König's experience with nebulised salbutamol in children under one year. We accept that all our studies were carried out during the recovery phase but we have not found that any child under one year has obtained any useful, clinical benefit from nebulised salbutamol when administered in the acute phase. Since our paper was published, two children between the ages of 12 and 18 months have responded well, and we have since heard of another who apparently obtained benefit by age 11 months. We still recommend that salbutamol be given to all wheezing children over one year but think it unlikely that many children younger than this will respond to this form of treatment.

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Intrathecal ATS and high dosage diazepam in neonatal tetanus

Sir,

We should like to make a few comments about the report by Khoo *et al.* (*Archives*, 1978, **53**, 737). Seven of the 19 neonates studied required total paralysis with IPPV for uncontrolled spasms, 2 died, and 5 more might have died but for total paralysis and IPPV. Therefore, it is not justified to say that improved survival was due to administration of high doses of diazepam alone.

Recently we initiated a study on the efficacy of a regimen consisting of intrathecal administration of anti-tetanus serum (ATS), and high doses of diazepam (15–30 mg/kg per day) and chlorpromazine (15–30 mg/kg per day) intravenously.

Between July and October 1978, we studied 10 neonates (Table). Diagnosis was on clinical grounds, and severity was graded using the criteria of Patel and Joag (1959). Immediately after admission an IV line was established and diazepam administered at the rate of 1 mg/kg per minute until the infant was free of spasm and rigidity. This was followed by administration of ATS, 250 IU intrathecally, and 1500 IU IV. Penicillin and gentamicin (5 mg/kg per day) were given. Infants were nursed in the paediatric ward. The umbilical cord was cleaned with spirit, and painted with gentian violet routinely. Pharyngeal suction was done at regular intervals.

Subsequent muscle relaxation was achieved by alternate IV administration of 2.5–7.5 mg diazepam and chlorpromazine, each at 2–4 hourly intervals (total daily dose of each drug 15–30 mg/kg). Once spasms had been controlled, a nasogastric tube was inserted for feeding and giving diazepam and chlorpromazine. Sedation was gradually tapered off at a rate of 10–15% of total dose administered at intervals of 1–2 days, depending on the degree of hypertonia. None of the infants was given IPPV with total paralysis.

Eight neonates recovered completely and 2 died, one of fulminant bronchopneumonia and the other with aspirant pneumonia. The average duration in hospital for the survivors was 20 days, and the average period for IV diazepam and chlorpromazine 3.4 days. We observed that the shorter the interval between the onset of the tetanus neonatorum and the intrathecal ATS, the quicker

Table The 10 neonates* studied

Case	Gestational weight (kg)	Age at onset (days)	Instrument for cord cutting	Grade	Spasm controlled (hours)	Duration of sedation (days)	Hospital (days)	Outcome
1	2.8	6	Blade	V	48	20	30	Recovered
2	2.6	6	Blade	V	48	7	13	Recovered
3	2.7	5	Razor	V	9 days	25	25	Recovered
4	3.0	9	Scissors	IV	24	12	12	Recovered
5	2.0	5	Scissors	V	Not controlled	—	—	Died 50 hours after being admitted
6	2.4	7	—	V	36	9	10	Recovered
7	2.1	6	Kitchen knife	V	Not controlled	—	—	Died
8	2.8	7	—	V	72	19	20	Recovered
9	3.0	7	—	V	48	10	11	Recovered
10	2.7	6	Blade	V	120	30	40	Recovered

*All were term except for Cases 5 and 6.