Changes in deep body temperature before a cot death

EDITOR,—Infection has been implicated in sudden infant death, although its precise role remains uncertain as only minimal necropsy changes are seen in many cases. The infant described here showed many cot death risk factors and showed no outward signs of illness and no specific necropsy changes.

Case report
A boy born at 35 weeks' gestation to an 18 year old gravida 2 mother, weighed 2475 g with Apgar scores of 5 and 8 at 1 and 5 minutes. After resuscitation at birth, the baby required ventilation in for respiratory distress during which time he was treated with antibiotics, given a bolus of albumin, and 10% dextrose for an episode of hypoglycaemia. Phototherapy was used for one day. Bottle feeding commenced at 4 days of age, he showed good weight gain, and was discharged home weighing 2740 g on day 18.

He lived with his mother and her partner, both smokers, and a brother aged 18 months. He had no previous illness, was receiving multivitamin drops daily, and was feeding well.

At 8 weeks of age this infant was recruited to a study solely aimed at assessing the effects early infection have on the deep body temperature pattern. This study involved the use of three thermistor probes,1 a soft anal probe inserted into the rectum to 5 cm from the anal margin, a skin probe attached to the right shin, and a third probe to measure the ambient room temperature, placed in the cot about one foot from the sleeping infant. All three probes were attached to a Grant data Squirrel logger, set to record the temperatures at minute intervals, throughout the night from one hour before bedtime until the next morning.

On the night of monitoring the baby was well, but the baby's brother had a cough and cold with a runny nose. The baby weighed 4450 g, went to sleep at 23.30 hours, woke for a feed at 01.30, and was put to bed at 02.40 hours. He was placed supine in a crib, wearing clothing and covers totalling 9.7 tog (Shirley Institute, Manchester). All members of the family slept in the same room. The mean (SD) overnight ambient room temperature was 28.47 (3.64)°C. Monitoring was commenced at 17.30 hours and continued throughout the night until 10.00 hours the next morning when the baby was found dead in his crib, in the semi-prone position.

At postmortem examination no specific abnormality was discovered. Vitreous humour and electrolyte concentrations were normal. No pathogens were isolated from blood, cerebrospinal fluid, lungs, or faeces. There was no marked cellular infiltrate in the lungs to suggest any infection and virology studies on lung tissue showed no influenza A and B, adenovirus, or respiratory syncytial virus. Histology revealed a very fatty liver but there were no lipid deposits in the renal tubules so that a primary metabolic problem was unlikely. The liver appearances suggested secondary metabolic upset, possibly due to an infectious process. Cause of death was recorded as cot death.

The figure shows the deep body temperature pattern of the dead baby for eight hours before death. The temperature was consistently raised above 37°C from the time monitoring commenced until five hours after being put to bed when death (presumably) occurred and the temperature fell. The fall in temperature to below 36-8°C, which normally occurs with sleep in babies of this age, was absent, and produced an overall pattern similar to that of other babies monitored during the prodromal phase of infection.

The disturbance of this baby's deep body temperature mimics those changes seen in prodromal illness elsewhere with a period of maximal weight loss and heart rate elevation. Should death occur during this period, no clinical signs are observed and necropsy findings are normal, while body weight is reduced.4

J A JACKSON
S A PETERSEN
P A MCKEEVER
M P WAILLO
University of Leicester,
School of Medicine,
Clinical Sciences Building,
Leicester Royal Infirmary,
PO Box 66,
Leicester LE2 7LX

Changes in deep body temperature before cot death.

J A Jackson, S A Petersen, P A McKeever and M P Wailoo

Arch Dis Child 1995 72: 97
doi: 10.1136/adc.72.1.97

Updated information and services can be found at:
http://adc.bmj.com/content/72/1/97.1.citation

Email alerting service

These include:
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/