Cot death among children of nurses. Observations of breathing patterns

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SUMMARY

Research into cot death has recently been focused on a search for pre-existing chronic abnormalities rather than on the immediate events before death. Because nurses are trained observers, 30 nurses who had lost children by cot death were questioned. In particular, they were asked about any respiratory symptoms which had been present in the absence of respiratory tract infection. Some (37%) of the nurse mothers had noted unusual respiratory events (wheezing, apnoea, irregular respiration, or cyanosis) in their children during the early months of life. Only 6% of non-nurse mothers who similarly had lost children recalled respiratory difficulties. None of the 60 nurse mothers with healthy infants gave a history of respiratory difficulties in the absence of infection. The importance of taking a careful history from any parent who loses a child by cot death is stressed.

Sudden infant death syndrome, or cot death, continues to be the leading cause of death in infants who are aged between one week and one year. Typically, a well cared for infant is placed in a cot at night and is found dead in the morning. Such death is silent, and sudden. Recently it was suggested that there might be pre-existing chronicity in some infants who died unexpectedly. Evidence of symptoms before death in some cases has also been reported. However, in many instances parents have denied the presence of symptoms or clues before death. In an attempt to study this in more detail, trained nurses who, too, were parents and had lost children by cot death were asked to record the respiratory events of their children from birth to death.

Methods

The names of 39 nurses who had lost their own children were taken from the register of parents compiled by the National Sudden Infant Death Syndrome Foundation. A total of 30 nurses agreed to take part in the study. Sleeping, feeding, and breathing patterns were investigated, as too were the circumstances of death and the presence of any previous infection. In particular these cot death parents were asked about the presence (and frequency) of apnoea, cyanotic episodes, wheezing, and unusual breathing.

In addition, 100 parents who had lost children by cot death and who were not nurses were questioned regarding the presence of circumoral or peripheral cyanosis, apnoeic episodes, wheezing, and unusual breathing patterns. Each parent was asked these questions within a month of the loss of her child. In an attempt to lessen the chance of over-observation by the cot death nurse parent, 60 nurses who were parents but who had not lost children were also questioned regarding the occurrence of apnoea, cyanosis, and breathing irregularities in their children in the first 6 months of life.

Results

Thirty nurses who were also cot death parents took part in the study, and 11 (37%) of them had noted some unusual respiratory events. Two of the infants under 3 months of age had been noted to have periodic wheezing, 2 infants had been in hospital with apnoeic episodes, 1 infant had rapid irregular respirations, and 6 infants had periodic cyanosis. Two infants in one family (not twins) had died when each was aged 2½ months: wheezing had been recorded in the history of the first child, and the other one had had irregular breathing patterns with periodic rapid respirations. Of this group of 11 infants, 6 had had no upper respiratory tract infections, 3 infants had each had one, and 2 infants had had more than one upper respiratory tract infection. Three of this group had been 1st children, four were 2nd children, one was a 3rd child, and two were 4th children. The remaining child was the last in a family of 9 children. The average age at the time of death for this group was 4 months.

In the remaining 19 infants who had had no apparent respiratory difficulty before death, 10 had had no symptoms or upper respiratory tract infection
before death, 8 had each had one, and 1 infant had had four upper respiratory tract infections. Eight of these children had been 1st children, five were 2nd children, and five were 3rd children. One child was a 5th child. The average age at the time of death for this group was 2·4 months. No infant in either group had seemed ill at the time of death and none was febrile. No infant was taking medication at the time of death.

In the group of 100 cot deaths 6% of parents who were not nurses had noted cyanotic episodes or breathing irregularities before death. 31% of these infants had had mild respiratory infections before death.

No apnoea or cyanotic episode had been observed by the 60 nurses who were not cot death parents and none of these nurses had noted wheezing or breathing abnormalities in the absence of an upper respiratory tract infection.

Discussion

Several investigators have stressed the need to re-examine the clinical histories of infants who die unexpectedly, and recent findings have focused attention on a search for chronic abnormalities and symptoms during life, rather than on the immediate events before death.

Carpenter et al.7 reported that children who died unexpectedly in infancy often had symptoms of illness before death. In their study the 97 children who died suddenly had a total of 260 symptoms (compared with 48 symptoms in the control group) during the 3 weeks before death. Only 7 of the infants who died were said to have been symptomless during the entire period. Upper respiratory tract symptoms, cough, irritability, vomiting, diarrhoea, rashes, changes in cry, and fever were the most common. Stanton et al.6 studied the terminal symptoms of 145 children who died suddenly and unexpectedly at home and reported that 59% of such children had had symptoms in the 48 hours before death. Respiratory symptoms were common. Although parents have reported the absence of antecedent clues, Emery and Crowley,8 in a study of 50 cases of sudden unexpected death, reported that each one had had symptoms before death. In 33 histories taken later, information was revealed that directly related to the infant's death which was contrary to the history given to the coroner.

The assumption that all infants who die of cot death are healthy before the event is currently being examined. While the circumstances of the actual death may imply an acute event, it appears that some infants may be at higher risk from birth,9 and others may have recurring respiratory difficulty. Stein-schneider,5 Shannon et al.10 and other respiratory physiologists have given data on apnoea and its relationship to cot death. Kelly et al.11 reported on 84 infants with histories of apnoea who were connected to apnoea monitors at home, 27 of whom had had at least one episode of apnoea while monitored and 17 of whom had been resuscitated at least once. The histological effects of chronic hypoxia in some infants who had died suddenly or unexpectedly were studied by Naeye.4 He suggested that chronic underventilation may occur in some infants and that this mechanism might be responsible for the thickened pulmonary arteries in cot death victims.8

The problem of retrospective study into cot death is considerable. The occurrence of signs or symptoms preceding death may go unobserved, or may be thought too slight to be reported, especially at a time of bereavement. The sudden loss of an apparently healthy infant makes this disorder almost unique. Typically each parent recreates in his own mind the few hours before the death of his child to search for evidence that might have, in some way, prevented the death. Often such histories are confined to the immediate period before death. Antecedent symptoms—such as respiratory difficulties—especially those unassociated with illnesses, may be forgotten or are barely mentioned by parents and physicians. Nurses are trained observers. Their observations of patients appear in daily nursing tasks and training programmes. The results of this study suggest that unusual respiratory patterns were noted in 11 (37%) of 30 nurses' infants who died of cot death. These results contrast with the data taken from other parents who had lost infants by cot death. Nurses may be more alert to respiratory difficulty in children, therefore it is important that none of the nurses used as controls who had not lost infants noted respiratory difficulties unassociated with upper respiratory infections.

A problem with this type of study, in which a history is taken from parents who have lost a child, is in deciding how often respiratory symptoms are imagined or exaggerated by parents seeking to explain a catastrophe. Nevertheless, careful clinical histories are worth taking and may help to reveal more clues in the causes of cot deaths.

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