SUDDEN INFANT DEATH SYNDROME

& THE NEAR MISS

ESSAY

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Master Degree in Pediatrics

By

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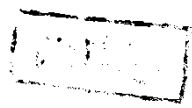

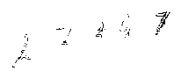

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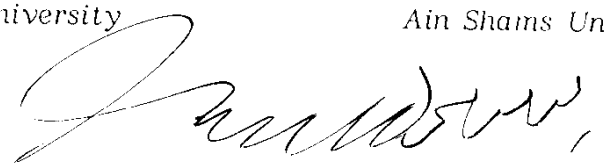

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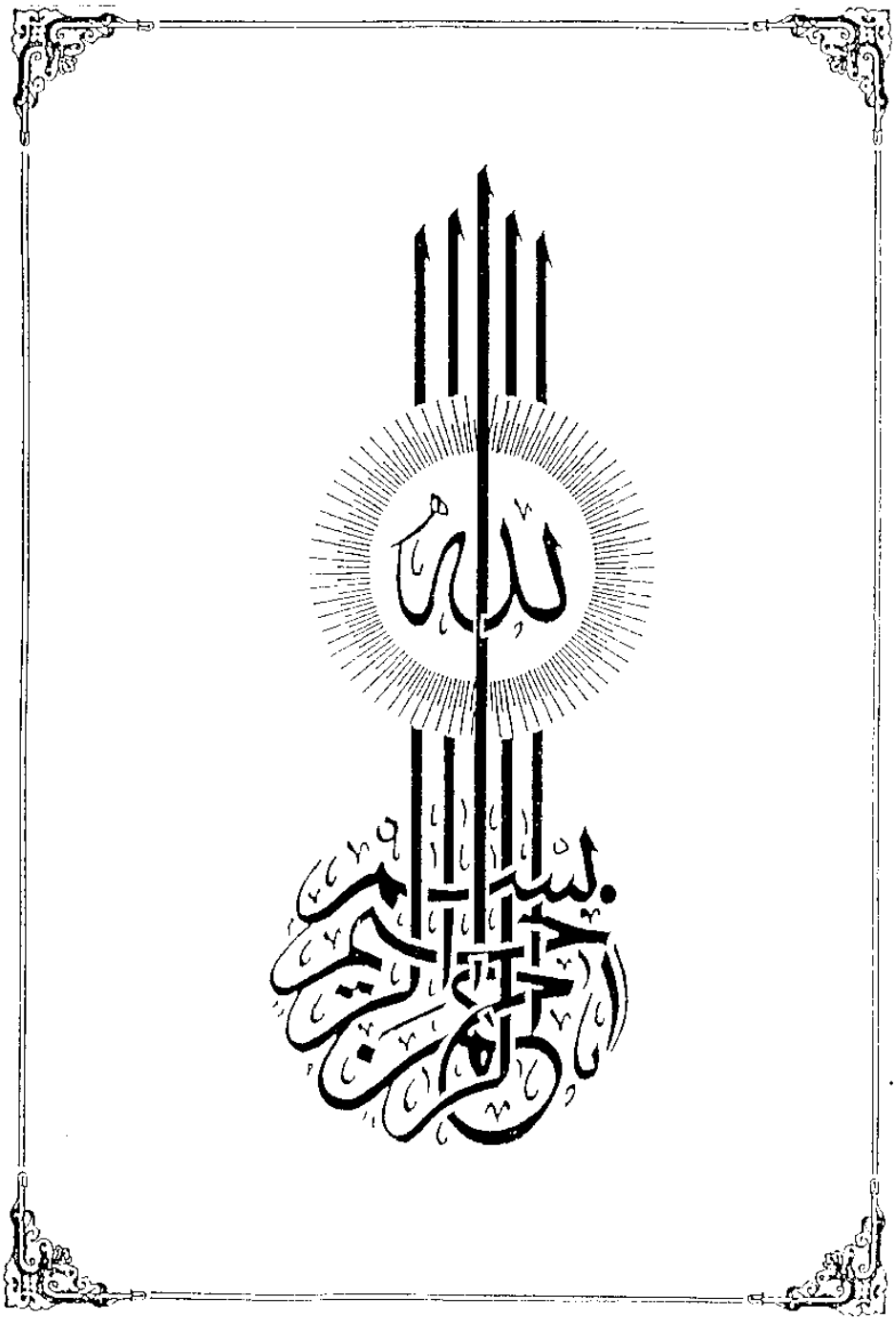

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INTRODUCTION

A 1 to 4 month old infant, thought to be healthy and thriving and placed in a crib for a nap or sleep, Sometime later is found dead. In most circumstances, a standard postmortem examination reveals nothing. The picture is repeated thousands times annually. The number alone commands the attention of clinicans, the interest of researchers and the anxiety of parents. Sudden unexplained death in infancy, Sudden Infant Death Syndrome (SIDS), and, in the Britich terminology "Cot death" are all adequately descriptive terms. Moreover, this intriguing syndrome has recently acquired the reputation of being the commonest cause of infantile mortality in developed countries as those in Western and Northern Europe and North America. In Egypt there is a common belief amongst mothers that if young infants are left in the prone position they are at risk of suffocation. The current concept of smothering by the pillow or matress is very unlikely except in the premature infant. However, the supine position of the infant, the care of the Egyptian mother for her infant keeping him in her room and the frequency of extended families in Egypt are reminiscent of the life-style described by Davies D.P. in Hong-Kong (1985) to which he ascribes the low incidence of SIDS there. However, the factor of racial incidence should not be ignored. It is clear that investigation of the incidence of this condition in Egypt would be of paramount interest.

DEFINITION & TERMINOLOGY

The sudden and unexpected death of an infant, for reasons that are unclear even after an autopsy, is the most common manner of death in the first year of life following the neonatal period (Mellins R. Haddad G. 1983). However Naeye et al. Stated that: Deaths were categorized as Sudden Infant Death Syndrome when they were sudden, completely unexpected, and unexplained by clinical or commonly recognized postmortem findings (Naeye R.L., Messmer J. Specht T. et al. 1976).

The near-miss for sudden infant death syndrome (SIDS) are infants who were found to be in acute distress because of apnea or cyanosis and received resuscitation, and subsequent laboratory studies failed to demonstrate an acceptable cause (Gascon G.G. 1981).

INCIDENCE

In general SIDS occurs in approximately 2 to 3 infants per 1000 live births and accounts for between one-third to one-half of all infants who die between 1 week and 1 year of age. Based on such data; it is clear that SIDS is the single largest cause of post-neonatal infant mortality in developed countries (Steinschneider A. 1978).

1. The incidence of sudden infant deaths in England and Wales lies between 2 and 3 per 1000 live births with one to two thousands such deaths annually in Britain (Forfar J.O. 1984).
2. The incidence in the United States is between 2 and 3 per 1000 with about 8000 babies a year (Bergman A.B. 1982) and in American Indians it is 5.93 per 1000 (Kraus J.F, Borhani N.O. 1972).
3. An incidence as low as 0.06 per 1000 live births has been reported from Stockholm, Sweden (Hasselmeyer E.G. 1982).
4. In a French county (Seine-Maritime) between 1978 and 1981 SIDS rate is 2.71 per 1000 live birthes (Wagner M. Samson-Dollfus D, Menard J. 1984).
5. In Scotland 1981-1982, the cot death rate was 2.7 per 1000 live birthes overall (3.3 for boys, 2.1 for girls) (Arneil G.C, Brooke H, Gibson A.A. et al. 1985).
6. In Alaska from 1976-1980 the incidence was 6.28 per 1000 live births among natives VS. 2.14 per 1000 live births among whites (Adams M.M. 1985).

7. In Irish population, scoring system in all liveborn infants delivered in the Rotunda Hospital, Dublin from Jan 1, 1979, to Dec. 31, 1981, Of the 18 801 infants born alive 48 subsequently died from the SIDS (2.55 per 1000) (O'Brien S.J., Matthews T.G. 1985).

8. In Hong Kong, cot death is very rare; of the low post-neonatal mortality (3.1 per 1000) over the 5 years 1980-1984 only 15 cases of cot death were documented by forensic pathologists an approximate incidence of 0.036 per 1000 line birthes. It is speculated that perhaps life-style (including crowded living conditions: Babies are left alone much less, closer overall contact with the sleeping baby), the practice of placing babies supine in their cots rather than prone, and a lower frequency of preterm birth could contribute (Davies D.P. 1985).

9. The incidence of SIDS in Denmark is about 1 per 1000 (Biering-Sørensen F, Jørgensen T, Hilden F. 1979).

10. The incidence of cot death in New Zealand in three year period (1970, 1971, 1972) was 1.9/1000 live birthes (Tonkin, S. 1975).

11. The incidence in Tasmania is 2.98/1000 (Grice A.C., McGlashan N.D. 1978),

EPIDEMIOLOGY

Sudden Infant Death Syndrome is the largest single cause of death between one week and one year of age. Although there is no agreement about the cause of death, a number of epidemiologic factors have been associated with the syndrome:

I. Factors related to the infant:

1. Age:

Although SIDS can occur at any age during infancy, it is most common between the fourth and sixteenth week of life. It is relatively infrequent in the first few weeks, unusual after 6 months (Steinschneider, A. 1978).

2. Sex

Nearly all investigators agree that boys have a greater risk for SIDS (Shannon D.C. Kelly D.H. 1982).

3. Birth weight

Preterm birth (Naeye R.L. Ladis B. Drage J.S. 1976) and low birth weight for gestational age (Arsenault P.S. 1980) both increase the risk for SIDS. Apgar scores tend to be lower (Carpenter R.G. Gardner A. Mc Weeny P.M. et al. 1977).

4. Infants of multiple-birth pregnancies

Infants who are products of multiple-birth pregnancies have special risks. Several twin-pairs, both dizygous and monozygous have died in the same day (Arsenault P.S. 1980). Triplets are at even greater risk (8.3 cases per 1000) (Shannon D.C. Kelly D.H. 1982). This observation indicates

the probability that a strong environmental influence acts against an abnormal physiologic background in these infants.

5. Activity and Cry:

In comparison to siblings, affected infants have been described by their parents as less active and less responsive and as having an unusual cry (Stark R.E. Nathanson S.N. 1975).

6. The birth order:

The second or third in the birth order carries a higher risk than the first (Shannon D.C. Kelly D.H. 1982).

7. Feeding difficulties

An increased incidence of feeding difficulties during infancy has been observed with SIDS (Carpenter R.G. Gardner A. McWeeny P.M. et al. 1977).

8. The time of death

SIDS occurs almost invariably during an infant's sleep period (Biering-Sørensen F, Jørgensen T, Hilden J. 1979).

9. Infection:

Infants in whome SIDS occur. tend to have mild respiratory or gastrointestinal symptoms in the preceding week (Richards J.D., Mc Intosh H.T. 1972).

10. Type of feeding:

A group of three epidemiologists in Copenhagen published an article that treats only types of feeding, and the authors finally express the opinion that the nature of the infant's

feeding does not appear to be in any way related to causation of crib death (Biering-Sørensen, F. Jørgensen, T. Hilden J. 1978). Although, as we shall discuss, a large tongue with a strong sucking action (as can be found in artificially fed infants) may facilitate airway obstruction.

II. Maternal Factors:

1) The risk of SIDS is increased if the mother is less than 20 years of age, poor, unmarried, if she has delayed or failed to seek prenatal care, had a short interval between pregnancies, been ill during pregnancy or had previous fetal loss or if she has smoked cigarettes (Shannon D.C. Kelly D.H. 1982).

2) Maternal narcotic addition: the incidence rate of crib death for the infants of addicts was 20.9/1000 live births, a 5.5-fold increase (Rajegowda B.K. Kandall S.R. Falciglia H. 1978). The authors suggest that intrauterine exposure to narcotics and its subsequent effect on central control of respiration in the young infant may be the underlying mechanism for drug-related cases of sudden infant death.

3) Maternal blood group: Three studies found differences in maternal blood groups: an increase in type O (Arsenault P.S. 1980) or an increase in type B (Naeye R.L. Ladis B. Drage J.S. 1976) (Steele R. Langworth J.T. 1966) but the evidence is not established without of interference of other factors and of race (Shannon D.C. Kelly D.H. 1982).