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Dead Baby Jokes: Myths, Misconceptions and Tragedy in the Understanding of SIDS

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by

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Abstract

Sudden Infant Death Syndrome (SIDS) is a tragic, frustrating, yet intriguing phenomenon in medicine. While advances in prenatal and perinatal care have dramatically reduced infant mortality in general, the number of deaths attributed to SIDS has remained virtually unchanged. Although some interesting patterns and risk factors have been identified, there is still no clear understanding of the pathology or mechanism of death in SIDS.

SIDS is by no means a recent phenomenon. References to SIDS-like events appear frequently in the historical record and are even described in the Bible. The mysterious nature of these deaths has led to many proposed explanations, some scientific and some supernatural. In some cases, the tragedy has been multiplied - many parents have been put to death for infanticide in cases that were likely SIDS. This sort of movement was revived in the past 20 years, as British pediatrician, Roy Meadows, theorized that many SIDS cases were a result of child abuse, leading to a multitude of murder convictions. When Meadows' theory was called into question, many of these convictions were overturned.

In summary, SIDS is a mostly unexplained phenomenon that tends to elicit strong emotional responses from all segments of society. Consequently, a wide variety of theories on the etiology of SIDS have been proposed; however, none have yet been proven. The continued inability of medicine to effectively deal with this problem has led many to assume that the underlying cause must be either criminal or supernatural. In general, SIDS provides an interesting perspective on society's reaction to a syndrome that remains intractable to modern medicine.

Introduction

Sudden infant death syndrome (SIDS) is a unique, clinical entity in that cases tend to elicit strong emotional responses from family members of the deceased, as well as the community at large. Since SIDS is essentially defined by an unidentifiable cause of death (Byard 2004), cases lend themselves to speculation as to criminal or supernatural involvement. "Munchausen-by-proxy" and "child abuse" are always on the differential diagnosis in cases of unexplained infant death, so making a reasoned, medical verdict on cause of death can be a delicate undertaking.

Given the mysterious and emotional nature of sudden infant death, one should not be surprised that this syndrome has a compelling history in the medical literature. The evolution of our understanding of this phenomenon has involved a variety of academic missteps, some humourous and others tragic. In general, the story of SIDS illustrates

some important lessons about maintaining emotional objectivity in the evaluation and extrapolation of medical research.

Early Theories

In the early days of medicine, SIDS-like events were attributed to a variety of supernatural causes. Witches were implicated in medieval times, as they were thought to steal babies, murder them, and replace them in their bed without being detected (Byard 2004). Animals were also suspect, as some believed that cats were capable of "sucking away a baby's breath". Babylonians attributed sudden infant death to a specific demon god, Larbatu (Russell-Jones, 1985). While these scenarios may seem silly and farfetched, we should remember that coroners cited "visitation from God" as an acceptable cause of death well into the 19th century (Dally, 1997).

While cases of infant death with no identifiable cause left supernatural involvement as the only possible option, a great many cases of SIDS were likely attributed to "overlaying". This term refers to a baby being inadvertently smothered by a bed mate, in most cases a parent or nurse (Russell-Jones, 1985). In many cultures, families would often sleep together in the same bed, thus overlaying was a convenient verdict in cases of unexplained and unwitnessed infant death. A famous account of overlaying comes from the bible's story of Solomon, who had to determine the parentage of a baby with two women claiming to be its mother. The situation of two mothers and one child had arisen because another baby had been "overlain in the night" (Russell-Jones, 1985).

Unfortunately, many parents likely suffered cruel and severe punishments for SIDS cases attributed to overlaying, even when the malicious motives were not suspected. In the first century A.D., Egyptian mothers convicted of overlaying their children were sentenced to spend three days and nights continually hugging their dead offspring (Russell-Jones, 1985). In Great Britain, fear of alcohol-related overlaying was such that the Children and Young Person's Act of 1933 specifically mentions death occurring "while the infant was in bed with some other person […] under the influence of drink," as a severe form of neglect (U.K. Ministry of Justice).

Status Thymicolymphaticus

One of the first physiological theories regarding SIDS was put forth by the Swiss doctor Felix Platter (1536-1614), city physician of Basel and polymath, (Wilson, 1950; Mund and Baer, 2004). In 1614, he published a case report in which he attributed an infant's death to a large thymus compressing the cervical blood vessels and trachea (Silverman 1993). This concept was revived in the late 1800s by Richard Paltauf (1858-1924), Professor of Forsensic Medicine at the German University of Prague, whose anatomical research indicated that the thymus glands of SIDS babies were larger than those of "normal" babies. This research was significantly flawed, however, as the babies used as healthy controls were usually from poor families. As such, they tended to have smaller thymus glands as a consequence of poor nutrition and chronic illness (Sapolsky, 2004). Consequently, healthy babies with normal-sized thymus glands were diagnosed with what Paltauf called *status thymicolymphaticus* (ST). Individuals who received a diagnosis of ST were thought to be at risk for sudden infant

death and susceptible to unexplained death under anesthetic, even as adults (Jacobs *et al.*, 1999).

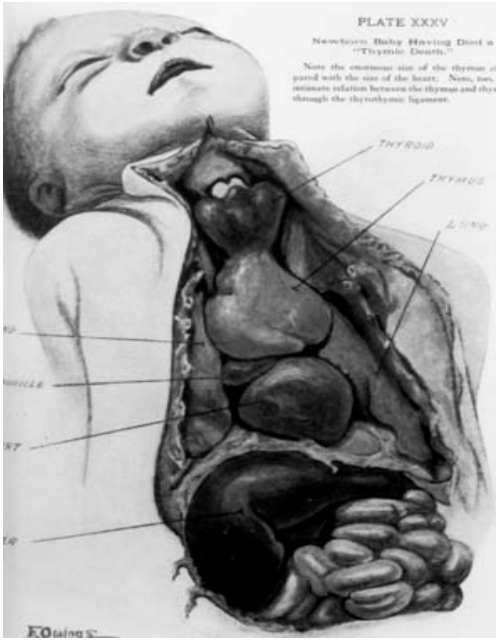


Figure 1: A 1922 textbook illustration of an infant autopsy, showing an "enlarged thymus", which is still of normal size for this age group, as later morphological research reveiled (Jacobs et al., 1999).

This diagnosis in itself would not be a cause for concern, however many babies died or experienced significant harm as a result of the various treatments for ST. Early on, surgery was employed, involving a partial or complete thymectomy. These procedures had a very high mortality – up to 33% based on some reports (Dally, 1997). Many healthy babies died before surgical procedures were eventually abandoned in favour of less invasive techniques.

The discovery of the X-rays in 1895 by Wuerzburg physicist Wilhelm Conrad Roentgen (1845-1923) had a huge effect on ST diagnosis and treatment. X-rays could be used to assess thymus size non-invasively. As well, with the failure of surgery, radiological treatment soon became the treatment of choice for ST. 1907 saw the first report showing that radiation could be used to shrink an enlarged thymus (Friedláender, 1907). By 1932 this was the standard of care, as shown by Boyd's statement that:

> *The surgeon who does not have the child with a wide shadow (of the thymus) treated by irradiation before the administration of an anesthetic may be held liable for malpractice if the child dies while under anesthesia*. (Boyd, 1932)

Despite flaws in the original research and subsequent contradictory reports (Russell-Jones 1985), ST continued to be diagnosed and treated until at least 1950 (Wilson, 1950). Many healthy people died, either from the early surgical interventions or from cancers developed as a result of the radiation treatments (Sapolsky, 2004).

Sleep Apnea

Unfortunately, ST is not the only instance of poor research techniques and interpretation causing confusion and tragedy in SIDS. This medical intractability appeared to be partially resolved by a 1972 paper proposing that SIDS was related to sleep apnea (Steinschreiber, 1972). The Steinschreiber study involved only five infants, all of whom had been referred because of apparent cyanosis due to sleep apnea. The babies' cardiac and respiratory patterns were monitored carefully and the apnea diagnosis was confirmed. When followed after the study, two of the five infants died with a verdict of SIDS. Steinschreiber also included a case report in which he noted that one of the children had four other siblings who had also died of SIDS. This finding was used to suggest a genetic component to sleep apnea related sudden infant death.

Despite the small scale of the study, Steinschreiber's paper was the most cited paper in the SIDS field between 1974 and 1996 (Bergmann 1997). Fear of sleep apnea related infant death led to the widespread use of cardiorespiratory monitors (Bergmann 1997). Such precautions were ultimately proved to be useless, as a large scale, prospective study by Southall found no correlation between breathing irregularities and SIDS (Southall *et al*. 1982).

As a tragic side note, Steinschreiber's paper may have allowed some parents to escape justice for infanticide. Authorities investigated, for example, Waneta Hoyt of Tioga County, NY, the mother of the child in Steinschreiber's report, whose four siblings had apparently also died of SIDS. Hoyt eventually confessed to murdering her children, was convicted in 1995, and died in custody in 1998 (Bergmann, 1997; Glendinning, 2003).

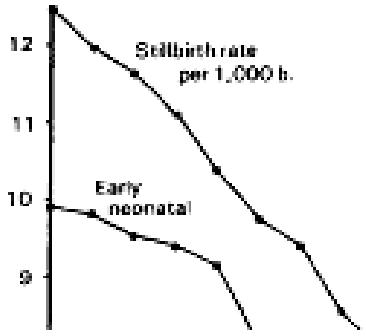
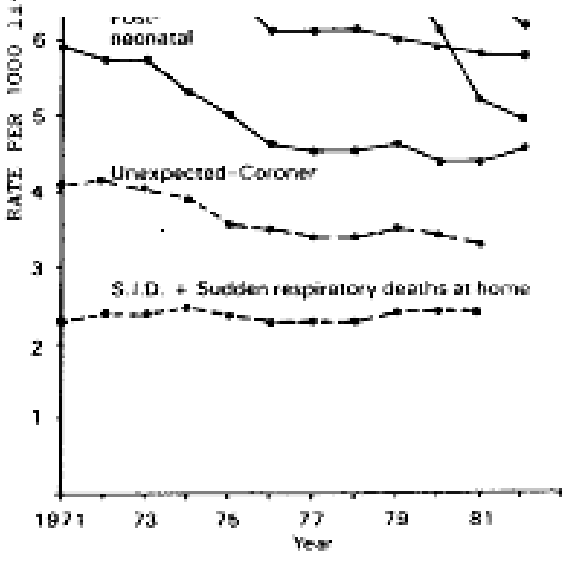


Figure 2: Mortality Rates per 1000 live births in England and Wales from 1971 to 1981 (Golding *et al.*, 1985).

Overdiagnosis of SIDS

The overdiagnosis of SIDS became a concern following the events surrounding Steinschreiber and Hoyt. Advancements in prenatal and perinatal care had decreased most sources of infant death; however, SIDS incidence remained unaffected (Figure 2). British pediatrician Roy Meadow presented the idea of Munchausen-by-proxy, and suggested that many apparent cases of SIDS were due to parental abuse (Meadow 1977). This idea was supported by Southall, another British doctor who gained respect by debunking Steinschreiber's sleep apnea hypothesis. Both doctors were called as



expert witnesses in infanticide cases, and their testimony helped in convictions of several parents for child abuse and infanticide (Chadwick *et al*., 2006).

However, several of these decisions were overturned on appeal, calling into question the credibility of Meadow and Southall. In 2005, the UK *General Medical Council* convicted four doctors, including Meadow and Southall, of professional misconduct related to their testimony in infanticide cases. All were accused of exaggerating the probability of abuse as the cause of unexplained infant death. Meadow's medical license was suspended and Southall's practice rights were significantly restricted, although both decisions were eventually overturned (Chadwick *et al.*, 2006).

Conclusions

The history of SIDS illustrates that, when faced with a medical condition fraught with emotion, clinicians' eagerness to explain and treat can lead to procedural missteps and ultimate tragedy for both patients and clinicians. In the cases of Paltauf and Steinschreiber, treatment decisions were made based on flawed research, and subjected healthy patients to unnecessary expense and significant physical risk. To prevent such events in the future, research data must be carefully evaluated and confirmed before being used to dictate clinical treatment. Furthermore, doctors should continually critically evaluate their current methods of practice – the fact that status thymolymphaticus continued to be diagnosed until 1950 illustrates that many clinicians are reluctant to challenge the established dogma of their profession.

The recent events surrounding Meadows and Southall emphasize the care that doctors must take in evaluating cases of unexplained infant death. When the autopsy is inconclusive, doctors must carefully consider the circumstances surrounding the death before deciding on a diagnosis of SIDS, versus abuse or accidental death. Perhaps most important of all, clinicians must recognize their own fallibility and present their medical opinion as exactly that – an opinion based on evidence that is rarely 100% conclusive. The various anecdotes discussed in this paper illustrate that a doctor's hubris can often be a significant threat to their patients' wellbeing.

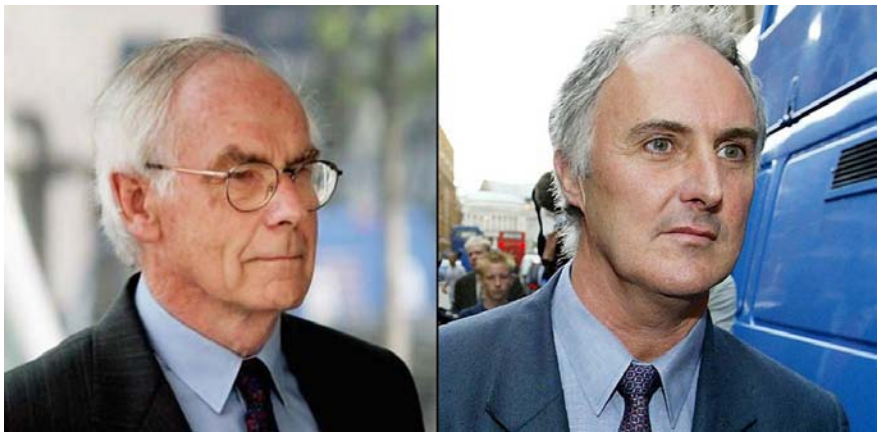


Figure 3: Drs. Roy Meadow (left) and David Southall (right). Both were prominent, well-respected doctors, severely reprimanded for giving improper testimony as medical experts in infanticide cases.

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