

The Past, Present, and Future of SIDS, Part I of II

Marianna Sandomirsky, MD, FCAP

CAP Forensic Pathology Resource Committee

Sudden unexplained infant deaths are complicated cases, not only for the families that experience the loss but also for the medicolegal community that holds the responsibility for investigating what happened. In this type of death there is a large emotional component associated with grief, as well as the need to understand what happened and ways to prevent a similar outcome in future offspring. The determination of the cause and manner of death is key to answering families' concerns and gathering information about the mysterious syndrome, known to many as Sudden Infant Death Syndrome (SIDS). Recent changes in the way many forensic pathologists regard this entity have occurred, and this two-part series will highlight the past, present, and future of sudden unexplained infant death (SUID).

SIDS has been a diagnostic entity since 1969 when a National Institutes of Health Consensus Committee codified "Sudden Infant Death Syndrome."¹ The committee defined SIDS as "the sudden death of any infant or young child, which is unexpected by history, and in which a thorough post-mortem examination fails to reveal an adequate cause for death." The typical SIDS case identified in the committee's 1969 report occurred in the winter months, unwitnessed during sleep, and involved infants two to four months old from a lower socioeconomic level. No single pathological process or mechanism of death became apparent as a cause of death after many nonspecific autopsies. Of note, the pathology community at that time did not seek additional information regarding the death scene investigation or clinical history—they relied purely on autopsies to explain SIDS.

In 1989, the National Institute of Child Health and Human Development convened a panel that clarified the SIDS definition to "the sudden death of an infant under one year of age, which remains unexplained after a thorough case investigation, including performance of a complete autopsy, examination of the death scene, and review of the clinical history."² The revised SIDS definition recognized the importance of scene investigation and clinical history as vital components of investigating sudden unexplained infant deaths.

The medical community continues to research SIDS, and thus far a definitive etiology remains elusive. The triple risk model defines the most common hypothesis.³⁻⁴ Since the early research days, physicians recognized that no single factor accounts for these infant deaths. The general understanding then and now continues to focus on combination of risk factors that include both endogenous and exogenous stressors. Endogenous risk factors for SIDS focus on the underlying vulnerability (ie, prematurity) of the infant and the infant's susceptibility to death during a critical developmental period. The exogenous factors mainly deal with unsafe sleeping practices (ie, sleep position, heavy bedding, bed sharing, etc).

It is continued medical uncertainty that has lead forensic pathologists to review how to approach SIDS and whether it is truly a syndrome or an unexplained entity that needs to be called what it is: sudden unexplained infant death (SUID).

References

1. Bergman AB, Beckwith JB, Ray CG, et al, eds. *Sudden infant death syndrome: proceedings of the second international conference on causes of sudden death in infants*. Seattle, WA: University of Washington Press; 1970.
2. Willinger M, James LS, Catz C. Defining the sudden infant death syndrome (SIDS): deliberations of an expert panel convened by the National Institute of Child Health and Human Development. *Pediatr Pathol*. 1991;11(5):677–684.
3. Guntheroth WG, Spiers PS. The triple risk hypotheses in sudden infant death syndrome. *Pediatrics*. 2002;110(5):e64.
4. Krous HF, Beckwith JB, Byard RW, et al. Sudden infant death syndrome and unclassified sudden infant deaths: a definitional and diagnostic approach. *Pediatrics*. 2004;114(1):234–238.