



H172 Histologic Findings of the Pancreas in Infant Deaths: A Review of Cases at the State of Maryland Office of the Chief Medical Examiner (MD OCME)

Derek Musgrove*, Baltimore Office of Chief Medical Examiner, Baltimore, MD 21223; Nikki Mourtzinis, DO, Maryland Office of Chief Medical Examiner, Baltimore, MD 21204; David R. Fowler, MD, Office of Chief Medical Examiner, Baltimore, MD 21223

Learning Overview: After attending this presentation, attendees will have a better understanding of some histological findings that may be seen in cases of infant asphyxia and/or Sudden Unexpected Death in Infancy (SUDI).

Impact on the Forensic Science Community: This presentation will impact the forensic science community by alerting attendees to potential histologic findings in infant deaths attributed to asphyxia and/or SUDI.

SUDI is used to classify those deaths in children 12 months of age or younger with non-specific autopsy findings following a complete forensic autopsy that includes toxicology and radiology, review of medical history, and thorough scene investigation.¹ Most recently, the term SUDI has been used in situations involving infants found in unsafe sleep environments, such as prone positioning, bed sharing, and sleeping on surfaces not designed for infants (plush bedding, large pillows, couches, etc.). Confounding the diagnosis of SUDI, in cases of unsafe sleep environments, is that the risk of suffocation or asphyxia cannot be ruled out as the cause of death. In addition, “gentle” homicides, in particular smothering, can also have similar non-specific findings as SUDI and may be missed, which is why the majority of these cases should be ruled as undetermined.¹

In a high-volume office such as the MD OCME, a majority of infant cases are ultimately ruled as SUDI, although in situations with strong supporting circumstances, such as a witnessed overlay or wedging, cases may be ruled as asphyxia. During routine review of infant autopsy slides from several autopsies, some sections of pancreas revealed inflammatory infiltrates that seemed independent of any systemic infectious process. Much is included in the literature about examining the histology of major organs, such as the heart and lungs, in cases of sudden infant deaths, but the pancreas is not typically included as a critical organ to sample. This raised the question of how often can such findings be seen in the pancreas on routine histology of infant cases? This led to the primary goal of this study, which was to review the histology of previous infant deaths in order to identify any possible trends. Another objective of the study was to see if there was a correlation between pancreatic infiltrates and the cause of death (i.e., asphyxia versus SUDI).

In order to recognize if pancreatic inflammatory infiltrates are a significant finding in infant deaths, a search of the MD OCME database was performed to identify all cases of infant deaths, ages 0 to 6 months, for the five years between 2013 and 2018. Pancreatic sections from a random selection of cases signed out as either “SUDI” or “Asphyxia” were included in the review. Excluded from the study were causes of death involving blunt force trauma, firearm injuries, and/or other natural disease processes, not inclusive of asphyxia. Per research, only one published article focused on the histopathologic findings in the pancreas in infantile asphyxia.² It is hoped that the results of this retrospective review will stress the importance of continually sampling those organs deemed “less important” in the context of sudden infant deaths and to potentially present findings that may force further investigation into these deaths.

Reference(s):

1. Vincent J. DiMaio, Dominick DiMaio. *Forensic Pathology 2nd edition*. Boca Raton: CRC press 2001: 325-359.
2. F. Matsumura, Y. It. Petechial hemorrhage of the conjunctiva and histological findings of the lung and pancreas in infantile asphyxia. *The Kurume Medical Journal*. Vol.43, p. 259-266, 1996.

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