

H74 Fetoneonatal Deaths—The Role of Forensic Investigations and Differential Diagnosis for Solving Complicated Forensic Cases: A Rare Case of Infanticide

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Learning Overview: After attending this presentation, attendees will be able to describe the role of differential diagnosis in cases of infanticide.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by demonstrating the importance of a standard forensic protocol for this diagnosis.

The term “stillbirth” refers to a fetus born dead and with a gestational age of at least 28 weeks.¹ In Western countries, fetal-neonatal mortality is 3 deaths per 1,000 births, while in underdeveloped countries it is ten times higher. The causes of death include perinatal asphyxia, infections during pregnancy, maternal disorders, congenital anomalies, or abnormal fetal growth.^{2,3} Death is not always the result of pre-natal/perinatal complications but also of crimes, such as infanticide. Infanticide is the murder of an unwanted newborn or a baby within the first year of life. Established parental risk factors for infanticide include a history of child abuse, domestic violence, psychiatric disorders, and economic hardship.^{4,5} In such cases, the role of the forensic pathologist is to establish whether the fetus was born alive and determine the cause of death. There are no published standardized forensic procedures for differentiating between infanticide and fetal-neonatal death from other diseases. A forensic protocol for cases of suspected infanticide is proposed and explored via presentation of an educational case example.

A woman presented to the hospital with hemorrhage and showing signs of a recent parturition. The physicians asked about the birth and health of the neonate. She confessed that she had given birth to a dead fetus. In her house, the fetus was found dead. An autopsy was performed. External examination showed a term fetus with no congenital anomalies. There was cyanosis of the nail beds, cutaneous pallor, subconjunctival hemorrhage, and traces of meconium. The umbilical cord, measuring 68cm, was around the neck. It was ischemic and appeared to have been cut. The placenta showed no anomalies. Internal examination showed some lung petechiae; a hydrostatic lung test was positive. Histologic sections showed the alveoli were expanded and functioning when he was born, with signs of acute pulmonary emphysema and rupture of the alveolar septae. A forensic mother’s examination was performed excluding uterine or vaginal diseases. The investigations showed that the birth had occurred regularly. Death was due to bleeding because the umbilical cord was not clamped, with asphyxia also.

Infanticide is a worldwide issue.⁶ In literature, infanticide is related to maternal psychiatric disorders. Infanticide sometimes occurs in the absence of support for the mother.⁴ The case reported is emblematic. The mother gave birth alone at home and cut the umbilical cord, without any health or family care. Asphyxia is the most common cause of death. In such cases, establishing whether the fetus suffered from perinatal complications (e.g., an umbilical cord looped around the neck) is critical. Features supportive of asphyxia include a cord that is very long and fetal petechiae. The forensic examinations in the reported case showed that the fetus had breathed and the cord was not clamped. Death was due to both hemorrhage and asphyxia and—had routine medical care been provided—it is suspected the newborn would have lived. This case shows that the diagnosis of infanticide is challenging, and there can be various modes of death. A standardized forensic protocol can assist in detecting infanticide cases and prevent them from remaining unsolved. A recommended investigative protocol includes the following: (1) evaluate anthropometric data and signs of fetal maturity; (2) perform full fetal autopsy, including histopathology with microscopic analysis of the lungs; (3) measure the length of the umbilical cord and evaluate for placental abnormalities; (4) perform a physical examination of the mother to exclude illegal abortion; (5) compare the data with the mother’s witness reports; and (6) assess the mother’s psychiatric comorbidities for imputability.⁷

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Forensic Sciences, Infanticide, Asphyxia

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