H111 Reducing Misdiagnosis in Child Abuse

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After attending this presentation, attendees will better understand the actions and goals of a Diagnostic Management Team (DMT) and its use in investigating suspected child abuse cases.

This presentation will impact the forensic science community by providing a description of the work of an expert group of coagulation specialists, medical examiners, and pathology residents reviewing suspected child abuse cases to reduce the possibility of misdiagnoses.

A DMT is a group of medical experts, specializing in specific areas, that meet regularly to review cases in real-time to advise on the selection of appropriate diagnostic tests and to interpret complex laboratory test results.

This expert team approach has been successfully implemented in several academic medical centers to provide clinical consultation in coagulation, transfusion medicine, hematopathology, microbiology, and several other areas. At the University of Texas Medical Branch in Galveston, TX, a DMT has been established to specifically evaluate cases of potential child abuse and determine if there is an underlying coagulation or vascular disorder to account for bleeding and bruising.

A 2015 report from the National Academy of Medicine revealed that every adult and many children in the United States have experienced at least one diagnostic error, often with very serious consequences.[1] The report indicates that there are many contributing factors to this problem, some of which are related to cognitive bias toward a specific diagnosis. With published information that 19 out of 20 potential cases of abuse are correctly diagnosed and one is a misdiagnosis, the misdiagnosis frequently occurs because of a significant bias toward a diagnosis of child abuse. There are few true experts in the United States dealing with coagulation disorders, and with 1 out of 20 cases misdiagnosed, approximately 30 percent of which involve a missed coagulation disorder, hundreds of cases are incorrectly diagnosed and treated in the United States annually.[2] Biases involving anchoring, premature closure, context errors, availability bias, and affective bias all influence a diagnosis of child abuse.

This misdiagnosis of child abuse often leads to removal of the child from a loving family and often punishes an innocent and loving parent or caregiver. To avoid a misdiagnosis of child abuse in a bruised or bleeding child, living or deceased, a DMT composed of experts in coagulation, in partnership with a group of pathology residents planning a career in forensic pathology, meets monthly to discuss presumed child abuse cases from all over the United States that have been submitted to a coagulation expert at the University of Texas Medical Branch for review and expert opinion. Each case is reviewed thoroughly by one resident, then presented at the DMT meeting. A set of diagnostic questions, which are relevant to the specific findings in the case, is formulated for further analysis, and each question is researched in the literature to provide published evidence for the conclusions offered in the final report. This expert-driven DMT review of cases has resulted in arguments that support diagnoses for and against child abuse.

In this presentation, three cases analyzed by an expert DMT are shown with the following results: (1) diagnosed as abuse; (2) underlying disease present, which make abuse unlikely; and, (3) no definitive answer because of the high diagnostic complexity.

The concept of introducing true experts in coagulation, bone disease, and dermatology, who review all child abuse questions related to bleeding/bruising, bone fractures, and skin changes, respectively, greatly reduces the risk of diagnostic error presumed in child abuse cases.

Reference(s):

1. National Academies of Sciences, Engineering, Medicine. *Improving Diagnosis in Health Care*. Washington, DC: The National Academies Press, 2015.

2. Metz, Schwartz, Feldman, Lindberg, ExSTRA Investigators. Non-cutaneous Conditions Clinicians Might Mistake for Abuse. *Archives of Disease in Childhood*. 99 (2014): 817-823. doi: 10.1136/archdischild-2013-304701.

Diagnostic Management Teams, Child Abuse, Misdiagnosis

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