

E67 The Importance of an Interdisciplinary Approach for a Differential Diagnosis of Child Abuse: A Case Report

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Learning Overview: After attending this presentation, attendees will understand how, in the absence of a history of trauma or medical predisposing conditions, physical abuse should be considered as a differential diagnosis when children present cutaneous bruising or other bleeding manifestations, abrasions, and fractures.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by demonstrating that an interdisciplinary evaluation and a holistic approach are indispensable for the prevention and the diagnosis of Child Abuse (CA).

CA represents all forms of physical and/or emotional ill treatment, sexual abuse, neglect, and exploitation resulting in actual or potential harm to the child's health, survival, development, or dignity in the context of a relationship of responsibility, trust, or power.¹ CA represents a serious problem and the misdiagnosis or lack thereof is responsible for grave consequences with a 10% mortality rate and a 50% reinjury rate.² The diagnosis of CA is often an intuition of physicians. However, suspicion is not evidence and, therefore, health care workers should be able to recognize medical conditions that can simulate child maltreatment³ and alerting features.³

Reported here is an interesting case of a 3-month-old baby hospitalized by the parents due to the appearance of hematomas. A thorough medical history and a careful physical and clinical examination allowed physicians to rule out a hematological disease and to hypothesize CA. Therefore, they promptly transferred the child to the emergency room where the physicians could confirm the presence of abrasions on the face, a crusty lesion on the right nostril, a bruise on the left arm, the presence of a hematoma in the right shoulder with pain on mobilization. Skeletal Survey (SS) and thoraco-abdominal Computed Tomography (CT) investigations were also performed with evidence of multiple bilateral rib fractures with a discrete callus formation and lateral middle third right clavicle fracture with no callus evidence. The brain CT showed no signs of hemorrhage. The child was also subjected to a negative abdominal ultrasound, an eye examination with findings of right subconjunctival hemorrhage and some scratching eyelid lesions. Therefore, suspecting child maltreatment, the police were alerted and the public prosecutor disposed a forensic consultation.

The forensic investigation was performed and confirmed the presence of abuse signs: widespread bruising on the face, left cheek, and left upper limb with a bite mark on the left forearm, a second-degree abrasion in the anterior neck region, a right nasal fold excoriation, and right eye conjunctival hemorrhage. The radiological investigation findings and the skin lesions analysis and distribution provided useful information to define the manner and age of the lesions.

A precise assessment of bruises, based on evaluation of chromatic changes in subcutaneous hemorrhages, of the injuries multipolarity and bone fractures made it possible to assert that the injuries were not correlated and backdated to a single episode but to more than one violent traumatic episode. These injuries were compatible with a blunt injurious suitability that acted both with a compressive mechanical action of grasping and crushing and with an abrasive tangential concussive action, detected by the presence of a right sub-conjunctival hemorrhage that is considered a "marker" in recognizing young shaken baby syndrome.⁴ The forensic investigation confirmed that injuries were compatible with a child abuse diagnosis.

An interdisciplinary evaluation and a holistic approach are fundamental for the prevention and the diagnosis of child abuse.⁵ When children present with cutaneous bruising or other bleeding manifestations, abrasions, and fractures, in the absence of a history of trauma or other predisposing medical condition, physical abuse should be considered in the differential diagnosis.⁶ Bruises and fractures are the most common injuries found in physical abuse; therefore, a thorough forensic investigation including the assessment of the characteristics, the extent and type of bruising, and the skeletal survey⁹ appear to be the first line of investigation for suspected physical maltreatment.⁷⁻⁹

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