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CASE REPORT OPEN ACCESS

Case Report: Is it falling from Height or Physical Abuse?

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Background: Physical abuse is a non-accidental injury of the child. Physical abuse is the most frequently encountered, and the most easily recognized type of maltreatment. Most frequently, ecchymosis is detected related to physical abuse. If physical abuse is suspected, and necessary precautions are not taken, then severity, and duration of the physical abuse may increase.

Case Presentation: The study aims to present a pediatric case where the etiologies of the lesions on the victim's body were questioned, and to draw attention to the forensic-medical approach towards such cases.

Keywords: Abuse, physical abuse, ecchymosis

Introduction

Physical abuse may be described as a non-accidental injury of the child or an act exercised by a caregiver which harms or has the potential of harming the child (1, 2). Physical abuse is the most frequently encountered, and the most easily recognized type of maltreatment (1, 3). Although accidental injury is frequently seen among children, the suspicion of physical abuse should always be kept in one's mind for the child who was firmly asserted that he/she had been injured accidentally (4–6). Depending on the severity of physical abuse in children, traumas ranging from minor injuries such as bruises, ecchymoses up to severe potentially life-threatening injuries may be seen (1, 2, 4, 6-8). Depending on physical abuse, the lesion that is most commonly detected in children is ecchymosis (4–6). If physical abuse is suspected, and necessary precautions are not taken, then severity and duration of the physical abuse may increase (9–11). Physical abuse towards the child has been recognized worldwide as a serious public health problem, since it can be seen in all races and societies (12, 13). The study aims to present a child asked about the origin of the lesions on the victim's body and to draw attention to the forensic-medical approach towards such cases.

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Case Presentation

An 18-month-old male patient was referred by the court to issue a medical report on whether his injury detected at the time of incident is caused by falling from height or not.

The available documents were examined, and his mother's account of the event was listened. She told that she was working, so she used to leave her child with his grandfather and grandmother during her working hours. However, on the day of the event, the grandparents said that they would be very busy, so they could not look after the child. Therefore, she entrusted her son to her friend during morning hours. In the afternoon of the same day, the husband of her friend called the grandfather, and had told him that they would not want to look after the child. But the grandfather said that he had been very occupied, so he would not pick up the child. In the evening when the child was picked up by his grandfather, he had seen bruises on his cheek, face, back, and behind his ears which were not present in the morning. So his mother claimed that her child had been beaten by her friend.

However in her defense statement, her friend argued that the child was perfectly healthy in the morning when she took him in, as it was the case when she had handed him over at night, without any so-called bruises. She added that she absolutely had not beaten the child.

An interim medical report written at the same day in the emergency service indicated the presence of ecchymoses on the left half of child's face, on the anterior aspect of the right femoral region, and abrasion on the left side of his neck. In addition to the findings, the attached body diagram also demonstrated widespread ecchymosis on the back of the child. The forensic report prepared by us was as follows: Facial ecchymosis described in the interim medical report is large enough to cover all of the left half of child's face. If abrasion on the left side of the neck had occurred as a result of a fall from a height, then traumatic lesions would have been strongly expected on the adjacent protruded parts of the body such as lower jaw, and shoulder. However, no traumatic lesion is detected on these regions. The lesions are scattered on various parts of the body including the left halves of the face and the neck, the right femoral region and the right knee, as well as the back. When distribution of the lesions, and development of the event are evaluated in combination, from a medical perspective, all these lesions are not expected to occur as a result of a fall from a height. Our report concluded that the child was exposed to physical violence.

Discussion

Physical abuse includes all behaviours carried out intentionally or unintentionally by an adult affecting the child's health, physical, and psychosocial development in a negative way (14). Physical abuse is the most frequently reported maltreatment in the United States, and in the years 2005, and 2006 its incidence rised to 4.4 per 1000 children (15). In China, the prevalence of physical abuse of a child is estimated to be 36.6 percent (13). In a recent study performed in South Africa, lifelong prevalence of physical abuse between the ages of 15 and 17 years, has been reported to be 34% (16). A comprehensive study performed in Turkey indicated that 45% of the children aged 7-18 years were exposed to physical abuse (16). In another study, encompassing 143 families, 87.4% of the participant mothers stated that they subject their child to physical abuse or neglect (17). A study in Turkish

province of Mardin, involving 1351 students in 5th and 8th grade, found that 42.6% of the students were experiencing physical abuse at some point in their life (18). Unfortunately, many societies consider physical punishment as a necessary educational tool to manage and discipline children, and also a beneficial instrument during their upbringing in teaching children to obey and respect elders (13, 19). In a study consisting of 502 mothers aged 23-57 years in two different centers in Turkey, a university hospital and a state hospital, 47.8% of the parents who applied to the university hospital, 44.9% of the parents who applied to the state hospital, stated that they had used domestic violence against their children with the intention to discipline them (19). In the presented case, we think that the child who was left by his mother to a friend for his care, was physically punished by his caregiver for the purpose of keeping him quiet.

In many countries, male children are under higher risk of physical maltreatment when compared with girls (20). As reported in a survey performed in the United States, among 16.897 children referred to the emergency service for being subjected to physical abuse, 55.9% were male cases (10). Of the 685 children in Oklahoma who died as a result of physical abuse in 21 years, 56% of cases were male (21). In survey studies performed among university students in Turkey, the researchers claimed that male children were more frequently exposed to physical abuse than girls (22, 23). In a study performed in the school children in Mardin, significantly higher rates of physical abuse were detected in male children than female children (18). Consistent with the literature, it is seen that the presented case is a male child as victim of physical abuse.

In cases where there are unexplained delays in bringing the child to the healthcare facility; explanations by relatives that are inconsistent with the child's physical and developmental abilities; contradictory statements; lacking or inadequate explanations for a severe injury; where the caregiver who brought the child, has no interest in the child's trauma, denies the obvious trauma, or is extremely anxious; physical abuse should primarily come to one's mind (1, 11, 14). Moreover; ecchymoses on femoral region, leg, abdomen, ear, neck, genital region, ecchymoses on different anatomical regions and levels, cigarette burns, bite marks, burn wounds on perineum and hip, stocking-pattern burn wounds on the lower extremities, traumatic visceral injuries (liver, and spleen lacerations), retinal bleeding, rupture of the frenulum, spiral fractures on legs and arms, fractures of skull, subdural bleeding, cephalic hematoma, traumatic tympanic membrane perforations should suggest physical abuse (1,2,4-7). Ecchymoses are the earliest, most prevalent, and most easily recognized signs of child abuse. Early detection of abusive ecchymosis with appropriate intervention may help prevent potentially heavier physical assualts in the future (5). In Turkey it was reported that, as a result of lacking proper diagnosis on his prior admissions to emergency service with bruises on various regions of his body allegedly caused by fall from a height; a 6.5-year-old case was exposed to increasingly severe physical abuse and ended up with detected arm fracture and posttraumatic stress disorder (9).

The frequency and average number of bruises associated with normal activity in children increase with age. In the great majority of the preschool, and school-aged children, bruises

caused by accidents may be seen. In children who recently learned how to walk, non-abuse bruises occur most frequently on knees and legs, and most of them are seen on bony eminences such as forehead (24). In a study encompassing 973 children younger than 3 years of age without any incident of physical abuse, the authors determined that bruises are extremely rare in babies less than 6-9 months of age, and they are most frequently seen on the forehead, and upper extremities of the children who just started walking (25). Bruises caused by physical abuse are most frequently seen on the face and the head (26). Especially in children less than 4 years of age, ecchymoses seen on the ear and the neck are most probably associated with physical abuse (27). The presented case is an 18-month-old child who had ecchymoses on the left half of his face and abrasion on the left side of his neck. Despite the expected occurrence of traumatic lesions on adjacent eminences to these regions, the child had no lesion on lower jaw or shoulder; but he had scattered lesions on the anteroposterior, left and right side of his body; which supported the doubt of exposure to physical abuse.

Physical abuse may incur serious harm on children. In children who are exposed to physical abuse; cognitive disorders, decline in academic achievements, increase in aggressive physical behaviours, substance abuse, attention deficit, hyperactivity syndrome, and anxiety disorders are more frequently seen (28, 29). A systematic review has determined that child physical abuse is associated with the risk of lifelong depression and anxiety (30). In a study performed in Turkey involving 399 university students, it was reported that students exposed to physical abuse both at home and in the school perceived self-incompetence in problem solving skills, compared to those who had not such history (31). Unfortunately; physical abuse, which has the potential to cause such serious problems in the future, can be skipped depending on many factors. In emergency services, the first assessment of suspected physical abuse in children is very important (10). In another study, it was reported that 31% of children with head trauma due to exposure to physical abuse had been initially misdiagnosed (32). In our case report, evaluation of the findings obtained during detailed examination performed in the intensive care unit could confirm the assertion of physical abuse. However, the fact that the patient was brought into the intensive care unit by his family with the claim of physical abuse facilitated establishing the diagnosis.

Diagnosing physical abuse is not always easy to make. When parents are the abusers, then the child is brought into the healthcare facility not with the history of physical abuse, but with the claim of a domestic accident. The presence of a fictionalized event at home is facilitated with the fact that no other eyewitness is required. In injuries claimed to occur at home, frequently-asserted reasons are falling down from a sofa, an armchair or a similar object, and overturning or toppling of a hot liquid or object on the child (2). In children presented to a health care facility with such a history, physicians' neglect may delay the diagnosis of physical abuse resulting in fatal consequences (9, 21, 33, 34). In Turkey, a very scarce number of pediatricians and family physicians working in intensive care units has been trained for forensic interviews. Although illuminating all the details of the abuse case or the identity of the perpetrator are not among the duties of the physician; as soon as they detect the

reasonable doubt of abuse, they must take a comprehensive medical and factual history, refer the patient to another facility if needed, start the appropriate investigation, and notify the relevant authorities who will complete the medical assessment and criminal inquiry (11). We think that, providing the emergency service - family medicine physicians and pediatricians with necessary training and education for recognizing child abuse and conducting forensic interviews, will aid in early detection of physical abuse and improve conducting further processes. In addition, if the same trainings are given to teachers who interact with children as much as their parents, children who have undergone physical abuse without resorting to healthcare facility can be detected in the minor trauma phase. In an investigation with 764 teacher candidates, Can Yasar et al reported that those receiving training about child neglect and abuse were more apt at evaluating signs of physical abuse compared with those who did not (35).

Conclusion

In every wounded child presented to a healthcare facility, the probability of physical abuse should be kept in mind. In case of suspicion, a careful patient history should be obtained, contradictory statements inconsistent with physical findings should be investigated. On physical examination, injurous regions should be noted in detail, regions protected from external factors, and anogenital injuries should be investigated in depth. In our case, based on the lack of any evidence of traumatic lesions on anatomical eminences; presence of scattered lesions on anteroposterior, right, and left sides of the body; congruence between claims of the family and examination findings of the child, we have arrived at the conclusion that the child was exposed to physical abuse. The assessment of the nature and distribution of the lesions on the body of the child victims, the consistency of the narrated story and the event, are very important in identifying physical abuse cases. We think that training and education provided for emergency service and family physicians, pediatricians, and teachers about detection of child abuse and forensic interviews will contribute to recognition of physical abuse at an early stage, and implementation of necessary measurements.

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Conflict of Interests

The authors declare that they have no conflict of interest in the current study.

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