Case Report
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Infant Mortality Due to the Fall of Television: A Presentation of Two Cases

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Television, which emerged in parallel with the scientific developments in the last century, is the most common and effective mass media component, and became an indispensible part of the daily life of the modern societies. Because of its widespread use, television, especially as the result of falling on someone in the house, can cause injuries even death.

In this study, 8-month and 1-year old male infants who died after the fall of television and forensic autopsy were evaluated. In the first case, the television fell on the 8-month-old male infant as the result of the incident of two siblings of the subject (ages: 2 and 3) were playing with television stand, while the mother was folding the clothes next to him. In the second case, television and television stand fell on the unaccompanied subject while he was playing with them. In both cases, forensic autopsy revealed skull fractures, brain hemorrhage and lung damage.

It is important to raise the awareness of the families, and to take the simple and adequate precautions in the home environment in order to protect the children as the future of the society from the domestic accidents.

Keywords: television, accidental falls, infant mortality, safety

Introduction

Television, emerged in parallel with the scientific developments in the last century, is the most common and effective mass media component, and became an indispensable part of the daily life of the modern societies. Social communication, information exchange, education and entertainment are some of the most important purposes of the daily use of television. [1-3] There is at least one television in the 95% of houses in United States, and in Canada, there is at least one in the 95% and are at least two televisions in the 60% of the houses. [4,5] The intensive use of television in daily life can affect the family members differently. Especially, the visually moving scenes, colorful and illuminated images catch attract the kids and babies' attention and lead them to head towards the television. While the motor development of the infants shows differences between the individuals, a two-year-old infant is mature enough to turn on and off the television (3).

According to the data from 2015 from World Health Organization, one of the five most common reasons of mortality in the infants under 5 years is the injuries. [6] Injuries are considered as the one of the main causes of the deaths and disability caused by the accidents during the childhood in most of the developed countries. [7] Because of its widespread use, television can cause an injury, even death as a result of the fall on the person. The most frequent type of the injury caused by the fall of the television is the blunt head trauma. [8-10] Considering the mechanical properties and weight of the television, the risk of mortality and morbidity are higher in the accidents where it falls on the infants whose physical and motor coordination are poorly developed.

In our study, it was aimed to discuss the precautions which can be taken in order to prevent the infant mortality by taking two cases of infant death as the example.

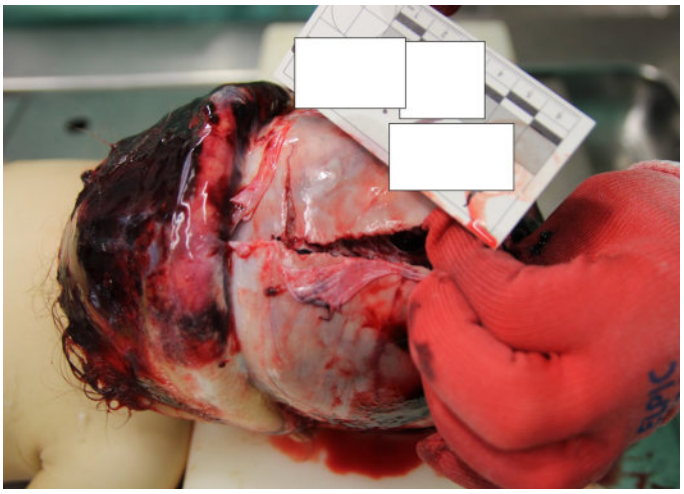
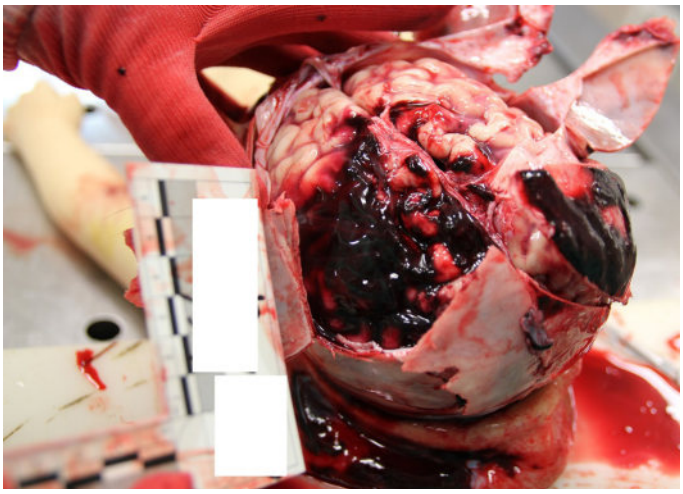


Figure 1.



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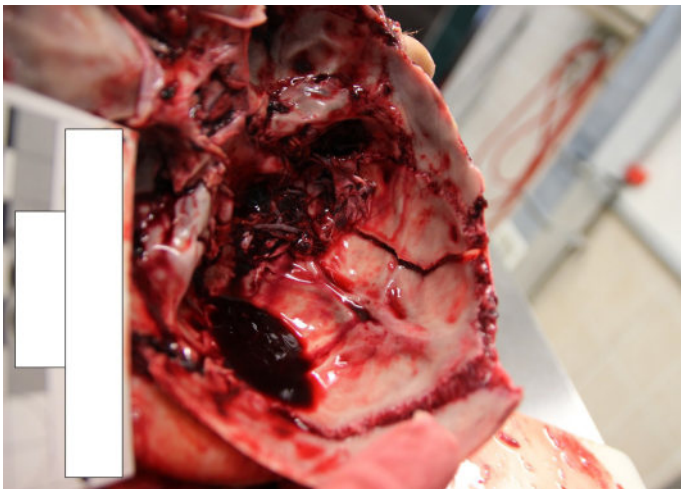

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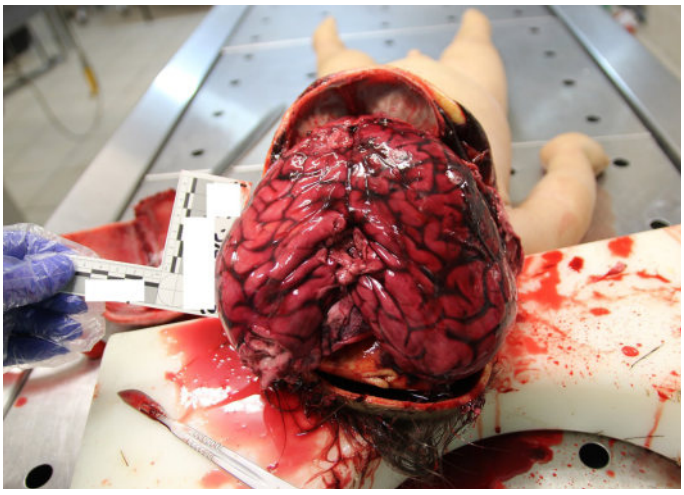

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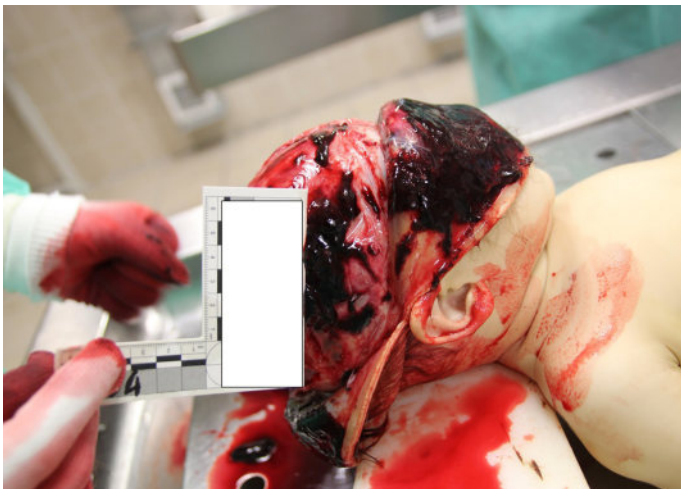

Figure 6.

Case Reports

Case 1: In the story of the incident, mother placed an 8-month-old male infant next to her on the floor, while she was folding the clothes. In the meanwhile, other two siblings (ages: 2 and 3 years old) of the infant started to play with the television stand. It was learnt that after a while, the television tilted over from the stand and hit the back of the mother, then fell on the baby, who was then immediately taken to the hospital and could not be saved despite all the interventions. It was understood that the television stand was unbalanced and could easily be shaken, and same television fell on the baby at the age of two months but was sent home without being able to detect any serious condition during the examinations at that time.

During the autopsy, the 8-month-old, 72 cm in height and 8.2 kg in weight, external examination of male infant revealed ecchymotic scratch areas on the forehead and nose, 2 cm long suture wound on the inside of the left elbow, needle marks on the inside of the right elbow, on the inside of the right and left wrists, on the back of both hands and both inguinal regions. During the internal examination, diffuse bleeding under the scalp (Fig. 1), fractures on the frontal-parietal-occipital bones (Fig. 2), epidural hematoma (4×2 and 3×1.5 cm in size and 0.3 cm thickness) on the frontal region, subarachnoid hemorrhage areas on the left parietal lobe (10×8 cm) and right parietal lobe (4×3 cm), focal subarachnoid hemorrhage on the other brain regions (Fig. 3), pneumothorax in the right chest, pink, foamy liquid in the trachea and bronchi, hemorrhage areas in the left lung, and collapsed right lung were observed. Alcohol, hypnotic-narcotic-stimulant substances and other toxic substances were not detected by the systematic toxicological analyses. The histopathological examination on internal organ samples taken during the autopsy revealed fresh subarachnoidhemorrhage in the brain, edema in the lungs, intraalveolar fresh bleeding and emphysematous changes, congestion findings in the other internal organ samples. It was concluded that the causes of death of the infant were skull fractures and cerebral hemorrhage due to the blunt head trauma and pneumothorax and lung injury due to the chest trauma.

Case 2: In the story of the incident, television and the television stand fell on an unaccompanied one-year-old male infant in the house. As the result of this, infant hit his head on the ground and television stand remained on the body. First examination in the hospital revealed an ecchymosis (2×3 cm) and hematoma on the left frontal region, an ecchymosis (3×3 cm) and hematoma on the right temporal region, an active bleeding in the right ear, reception of light reflex. Pupils were isochoric, midline and mildly myotic. An ecchymosis and edema was observed in the right eye. Fracture lines on the right fronto-parietal, the left fronto-temporal, the bilateral zygomatic, the bilateral occipital bones (more obvious on the right) and extending to the mastoid cells on the right were observed on the computer tomography. It is reported that subdural hemorrhage foci (4.5 mm) in the right fronto-temporo-parietal region, parenchymal hemorrhage foci in the right occipital and temporal regions and subarachnoid hemorrhage foci in the basal cisterns were observed. The subject was followed and treated in the pediatric intensive care unit was lost after 15 days in spite of all interventions.

During the autopsy, a 1-year-old, 80 cm in height and 13 kg in weight, external examination of the male infant revealed that edemas in both periorbital regions, ecchymosis in the right periorbital region, abrasion thought to be connected to a medical application, on the right corner of the mouth (3×0.5 cm), healing wound on the back of left foot (3×1 cm). Body looked swollen and there were needle marks on the back of the both hands, wrists, inside of the elbows, hells and toes. Internal examination revealed the hemorrhage on the right fronto-temporo-parietal region and in the inner surface of the heart. Intramuscularhemorrhage areas were observed in both temporal muscles (Fig. 4), as well as linear fracture lines on the right fronto-temporal and parietal occipital bone (Fig. 5) and epidural and subdural hemorrhage regions. Brain was spongy and in dark red colour (Fig. 6). Serous fluid was present on both rib cages, and severe edema was observed in the lungs, as well as petechiae. There were hemorrhage areas (2×1 cm) on the lower lobe under pleura of the right lung, and petechiae on the surface of the heart. Hemorrhage areas (2×0.5 cm) on the upper part of the esophagus were observed. Serous fluid was seen in the abdominal cavity. Alcohol, hypnotic-narcotic-stimulant substances and other toxic substances were not detected by the systematic toxicological analyses. The histopathological examination on internal organ samples taken during the autopsy revealed fresh subendocardial bleeding areas in the myocardium, widespread atelectasis in the lungs, fresh lobular pneumonia, indications of lung damage, presence of fibrin micro-thrombi in the vessel lumen, edema, hyperemia, fresh hemorrhage areas in the parenchyma of the brain tissue, as well as edema and severe hyperemia, and acute suppurative pancreatitis and hyperemia findings. The causes of death of the infant were concluded as skull fractures and cerebral hemorrhage due to the blunt head trauma and complications caused by lung injury due to the chest trauma.

Discussion

Rate of injury, due to the fall of television during childhood, increases all over the world because of the lack of information and the precautions about the subject. [10, 11] In a survey by the U.S. Consumer Product Safety Commission, it was reported that annual average of the individuals visited emergency service due to injuries caused by the fall of television were 15,400 between 2011 and 2013. [12] 64% of the individuals were between the ages 0 and 9. When compared the injuries caused by the television fall in the infants between the ages of 0 and seventeen, 19% of them had contusion and abrasion, 12% of them had internal organ injury, 7% of them had bone fractures and 11% of them had other diagnoses. [12] Also, most affected parts of the body were reported as head, arms and feet, and highest death ratio (74%) was seen in the childhood. [12]

Old tube televisions are heavier and have sharper angular, and their center of gravity is located in the front section. The center of gravity of the newly produced flat screen televisions is more balanced, yet, as the screen size increases, the center of gravity shifts and this makes them unbalanced. Nowadays, tube televisions are not sold in the electronic markets anymore.

However, new flat screen televisions are located more central locations at houses, while the old tube televisions are located in the rooms that are rarely controlled. Because of that, control of the parents over the child declines. [4, 10] In both cases, injuries were caused by the tube televisions located in the central rooms. In our second case, the accident happened because the infant was playing with the television unaccompanied. Because of that, parents should either check the safety of the infant more frequently or not leave them alone in the room.

In a study conducted in the University of Pittsburgh where the injuries caused by the fall of television during childhood, 52 cases of victim infant, youngest infant was 13 months old and mean age was 36 months, were detected. [7] All injuries occurred were reported to happen in the house environment and 83% of the cases happened without any eye-witnesses and the most common type of injury was blunt head trauma (83%). [7] In another study, conducted in Canada in 1997-2011, 179 cases where the patients visited the hospital because of the injuries caused by television fall were analyzed. [5] The analyses revealed that 81% of the cases were younger than 5 years old and 51% of the cases included the cases of babies who just started to walk. [5] Most of the injuries occurred at home on the weekends and most common type was the blunt head trauma. [5] Similar results were also obtained in other studies. [4, 10, and 13] Another study conducted in Elazig reported the age range of four male infant case of television fall as 15-36 months. [8] Two cases presented in our study had the ages of 8 months and 1 year. While 8 months of age is considered as young according to the literature, other two siblings (ages 2 and 3 years old) have the influence on the fall of the television and the stand on the case by playing with them. The other case, who was 1 year old, was thought to be vulnerable to the accidents due to reasons such as being at the initial stage of the walking, having undeveloped judgment and motor coordination, being unaccompanied and having curiosity for colorful and moving images on the television, having tendency to recognize the environment by biting and touching and not taking the necessary precautions against the accidents. In accordance with the literature, the primary injury leading to death is blunt head trauma in both cases.

In the first case presented, it was learnt that the television stand was unbalanced and was shaken easily even with the slightest touch. Because of the above mentioned reason, television had fallen on the subject when he was 2 months old, but luckily it did not cause any injury. However, the fact of that family did not have the television stand repaired to stabilize it or replace it with a new and firm-stable stand, and did not take the lesson from the first accident and take the necessary precautions clearly led to the second accident that caused the death.

Traumatic findings in the areas exposed to the trauma during the course of the fall of the television may also suggest the presence of physical abuse. Therefore, this kind of cases should also be considered as child abuse during the process of judicial investigation. The findings in the crime scene such as the type, location, weight of the television, as well as the properties of stand and altitude of fall, should be recorded, and physical-psychological development should be questioned.

Ota and colleagues investigated the danger of television in the house and level of knowledge of the parents about it in a study, and reported that the 85% of the parents included in the study were ignorant about the danger of fall of the television. [14] In another study, it was stated that because the novice parents know less than 50% of the present risks, and the situation is independent of the educational level unless the parents are pre-educated about how to raise a child. [15] In order to protect the children as the future of the society, it is important to raise awareness of the parents. Also, simple and enough precautions, such as using special television stands produced by the television manufacturers, stabilizing the television stands to the ground and the wall, placing the television cables out of reach of children to prevent them to pull them, not placing the items (toys, remote control, food etc.) that attracts the kids, not using the television stands with drawers, should be taken in the home environment.

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