Unusual presentation of more common disease/injury

Overzealous cardiac massage leading to unintentional infant death

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The case of an 18-month child is presented, with a picture demonstrating the thoracic trauma, caused from a hand pressure movement, perpetrated with an open right palm, in an attempt to perform an external cardiac massage. The child showed continuous episodes of 'crying spells' that the medical staff considered as benign, but an overprotective and mentally unstable mother kept on violently 'resuscitating' her son during such episodes. The last episode was characterised with a strenuous massage of the thoracic wall, causing evident bruises and leading to a cardiac contusion. The mother who perpetrated the trauma was sentenced for manslaughter, after the accidental character of the event, as well as the severity of her family situation and the precarious living environment of a socially abandoned single-acting parent, were all taken into account. The particular psychopathology of the care giver (mother) and the characteristics of the inflicted thoracic blow are described.

BACKGROUND

There is a variety of clinical pictures and forms through which child abuse and ill-treatment are encountered; violence perpetrated to infants and children, intentionally or not, has been widely studied since Kempe coined the term of the 'battered child'.¹ On the other hand, the role of cardiac contusion as a probable mechanism of sudden death has been underlined, but the cases have been generally related with a deliberate use of violence.²⁻³ We present a rare case of child death following overzealous and non-professional external cardiac massage, with a very particular picture of the trauma to the anterior thoracic wall of the victim.

CASE PRESENTATION

An 18-month old male child was emergently sent to a district hospital in central Albania. The mother, clearly confused, expressed deep alarm and concern regarding the 'lack of respiration' of the child. The latter had a history of several prior short-term admissions, due to 'crying spells' and 'lack of reactivity', as the mother consistently referred to the clinicians. All prior admissions were treated as minor symptoms of irritation to an otherwise completely healthy child; those symptoms regularly had subsided immediately upon arrival at the medical facility. The mother was repeatedly reassured, before the final event, upon the benign character of the 'crying spells' of her son.

On admission, the child presented a severe bradycardia and shock; he was defibrillated twice and consequently treated in the paediatrics intensive care unit. Four hours thereafter he was declared dead, and the police was informed. The mother was put into custody and charged the next day for homicide, with the aggravating circumstance of the killing of a minor individual, as the Criminal Code of the Republic of Albania foresees such an act.⁴

Figure 1 Hand-patterned trauma in the left anterior thoracic wall, caused from excessive pressure during the external cardiac massage, applied during one of several 'crying spells' to an 18-month old child.

Figure 2 Red blood cells infiltrating the myocardial wall (autopsy finding), consistent with a cardiac contusion (H&E, 160x).

INVESTIGATIONS

The forensic expertise was performed within the day, and the forensic expert documented and photographed a profuse bruising in the left parasternal region, with evident signs of a right-hand patterned pressure-related trauma (figure 1). Autopsy was performed in the University Forensic Facility of Tirana, and microscopic changes suggesting a cardiac contusion were found (figure 2).

OUTCOME AND FOLLOW-UP

The mother was prosecuted for ‘child homicide’ and thereafter sentenced to 12 years of prison with parole, since the defendant was granted a partial insanity defence, due to her slight (but obvious) mental retardation, as the psychiatric expertise concluded. The psychiatric expertise suggested an overprotective and extremely anxious mother, with profound adaptation issues and inability to cope with the normal parenting process, due as well to the insufficient social support. As a matter of fact, the mother was recently separated (although not legally divorced) with the husband, who left the home in miserable economic conditions, and emigrated from Albania. The mother was interrogated twice from the district state attorney and insisted on her attempt to have been resuscitating the child after a prolonged ‘crying spell’ and ‘lack of visible respiration’; this thesis was sustained from the defence during the court proceedings, apart from raising an insanity defence.

The state attorney accused the lady for ‘deliberate homicide’, but the judges opted for ‘manslaughter’, thus considering the accidental nature of the event. In fact, previous hospitalisations proved that the mother continuously tented toward the overtreatment of child’s minor medical problems. Thorough investigation suggested that the day of the accident, the child had another ‘crying spell’, and that the mother herself tried to resuscitate violently the child, through massaging the heart externally. The excessive and unnecessary use of force provoked this time a cardiac contusion, with subsequent bradycardia, shock and death.

DISCUSSION

Violence toward children in the actual Albanian society is probably underestimated, but it rarely has been found as a deliberate cause of death. In a recent and almost exhaustive report over this issue, the authors suggest the presence of serious gaps in registering the role that violence might have played in a child’s death.⁵ Strangely enough, reporting authors suggest in the same material (page 85) that in regard to violent deaths for the persons aged under eighteen years ‘... some data are only for internal use (of governmental structures) and are not published’.⁵

When reporting violence within families and child abuse in Albania, the paucity of available sources anyhow suggest that abused women have obvious parenting difficulties.⁶ In

our case, although no information was collected upon any violence toward the mother, she was practically acting as a single parent, and the continuous absence of the spouse created a very precarious situation for her and the child. Apart from that, the economic situation and the isolated life of a village, where the social assistance is very limited, might have served as predisposing conditions, such as the mother tried to seek continuously the only available help at the medical services, through overtreating the child and thus overestimating a benign 'cardiopulmonary' picture, leading to the fatal cardiac massage. The overall situation was complicated further from the fact that the mother suffered a mild mental retardation; in fact the parental psychopathology is considered as well a risk factor for child abuse.⁷

The importance of parenting programmes has been widely suggested.⁸ Attempts have been made from governmental and non-governmental organisations to improve the quality of parenting in Albania, but the interventions have been fragmented, since the actors working in the field come out from a diversity of working philosophies, and some very promising programmes are funded only subliminally.⁹

In discussing the trauma as an important cause of mortality in children, the literature emphasises the importance of the cardiac contusion and its pathogenetic consequences such as arrhythmia, severe hypotension and shock.^{10 11} The potential lethality of cardiac contusion is acknowledged for older individuals as well, and the described pathogenetic changes or mechanisms are similar to those described with the events registered in children.¹² In the majority of cases, homicidal thoracic blows to children are deliberately perpetrated through striking with fists, but even a commotio cordis rather than an overt myocardial contusion might suffice to produce lethal outcomes.¹³ The case we present here, albeit in the setting of a maternal psychopathology, documents a particular pattern of homicidal blow, performed with the wide-opened palm of the right hand, causing a particular pattern of external bruising, as well as myocardial contusion.

Learning points

- ▶ We refer a case of infant death due to overzealous cardiac massage, in the setting of an impossible social situation of the mother and her child that were not taken care of from the social and community services, being the latter extremely scarce and inadequate.
- ▶ Chest blows are serious and potentially lethal events for children. Blunt thoracic trauma is presented with a variety of clinical pictures, some of them potentially life-threatening, such as cardiac contusion. Chest injury is considered the second most important cause of traumatic death in children older than 1 year.¹⁴
- ▶ The prevention of child abuse, in whatever form it is met, is an important point of discussion and a challenge for the medical, social and penal policies.¹⁵ The economic status of the families and parental psychopathology are important risk factors that need to be taken into account.

Competing interests None.

Patient consent Obtained.

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