

## Case Report

# VALUE OF THE MEDICAL-LEGAL INVESTIGATION. CORRESPONDENCE OF THE FINDINGS WITH LEGALLY ESTABLISHED REALITY

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### ABSTRACT

In recent years, violence against minors has been the subject of in-depth study in all its historical, social and cultural dimensions, being able to be identified and treated according to rigorous scientific methodologies.

The A.A. report the case of an 8-year-old girl, who disappeared in a rural area, found dead a few hours later, on the recommendation of a young man who, despite having admitted to having gone away with the child, had not provided further details.

The forensic inspection revealed that the discovery area included an area with burnt undergrowth about 4 meters in diameter.

Examination of the external genitalia showed that the hymen was hemorrhagic in the right hemicycle, at 11 o'clock, with laceration of the most superficial layers of the anterior face.

In the present case, therefore, despite having limited historical and circumstantial data, it was possible to reconstruct the following damaging dynamic: the little girl, after having gone away with her aggressor, was first the victim of an attempt of sexual violence by the latter and later immobilized by placing a foot on the slender abdomen. She had been covered with brushwood which the attacker had set fire to, thus killing her.

This reconstruction of the criminal events, proposed to the investigating magistrate, was confirmed in each passage by the confessions made by the murderer, during the various degrees of trial, so much so that the final sentence reported in full the specific steps of the medico-legal relationship.

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## 1. Introduction

In cases of the disappearance of a minor, if the kidnapping is carried out by an individual outside the family circle, the kidnapping is usually only the prelude to another crime [1].

In the US, two-thirds of these kidnappings hesitate with the release of the child after the perpetrator has achieved his purpose, namely that of sexually abusing him/her; in a third of cases, however, the minor does not survive the kidnapping because the assailant decides to get rid of his victim.

In recent years, in the face of this serious problem, violence against minors has been the subject of in-depth study in all its historical, social and cultural dimensions, being able to be identified and treated according to rigorous scientific methodologies that have made it possible to achieve extraordinary results in terms of knowledge on the methods of implementation and the damage caused by them [2,3,4].

In fact, violence or attempted sexual violence against a child acquires its own characteristics in relation to the characteristics of the assailant, the age of the child and its consequences can be physical and / or psycho-behavioral, or more rarely, they can result in the death of the victim at the

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hands of the perpetrator, both as part of his/her original plan, and as an unforeseen consequence and in response to resistant behavior [5,6,7].

It is assumed that the murder of the minor is often carried out precisely as a result of an unexpected resistance to the assailant, or the assailant's awareness that the minor can report the incident.

In such cases, the likelihood that the outcome of the kidnapping will lead to unfortunate consequences increases significantly [8,9].

The assailant usually chooses his/her victim in playgrounds, meeting places or near his/her home and tends to gain the victim's trust by acting friendly, sharing games and offering gifts, while means of offense or threats is much less frequent [10]. In other cases, the assailant uses food with drugs [11].

In some cases, the aggressor inflicts multiple and repeated injuries, far exceeding those necessary to cause death [12]. In other types of abuse, they may not be visible on the victim's body.

For example, the erythema caused by rubbing on the external genitalia can resolve itself in a few minutes or hours, while minor abrasions of the most superficial skin layers as well as superficial abrasions may not be visible or easily recognizable after death [13,14,15].

Furthermore, this lesion, even more if not specifically localized at the level of the genitals, shows a similar frequency also in the population of non-abused subjects, especially in situations of imperfect hygiene, so as to make the differential diagnosis and the correct evaluation of the case even more complex, which, on the other hand, is easier following an accurate cadaveric examination related to a precise circumstantial data and the results of targeted laboratory tests [16,17,18].

## 2. Case report

An 8-year-old girl, who disappeared in the summer in a rural area, was found dead a few hours later, far from the place where she was last seen, on the advice of a young man who, despite having admitted to having gone away with her, had given no further details.

The medical - legal inspection revealed that the area of the discovery, in the depths of a wood, was characterized by the presence of low and sparse vegetation on ground covered with dry scrub that had recently been burned over a large surface area, in the context of which the body lay supine, arms abducted, elbows flexed and forearms supinated, pelvis rotated slightly to the right, lower limbs abducted and flexed. (Figure 1).



Figure 1. Corpse position at the time of discovery.

A frothy reddish mushroom emerged from her mouth. (Figure 2).

The conditions of the body did not allow appreciation of the state of the cadaveric phenomena [19].

The body surface, on which there were shreds of clothing largely destroyed by the heat, was affected by large areas of burns, modest quantities of flittene of varying degrees and entities such as skin delamination, often delimited by margins consisting of raised, burnt epidermis (with a patchy, "leopard skin" appearance). Below them the thrombosed vessels of the dermis were sometimes evident. (Figure 3)



Figure 2. Presence of foam protruding from mouth.



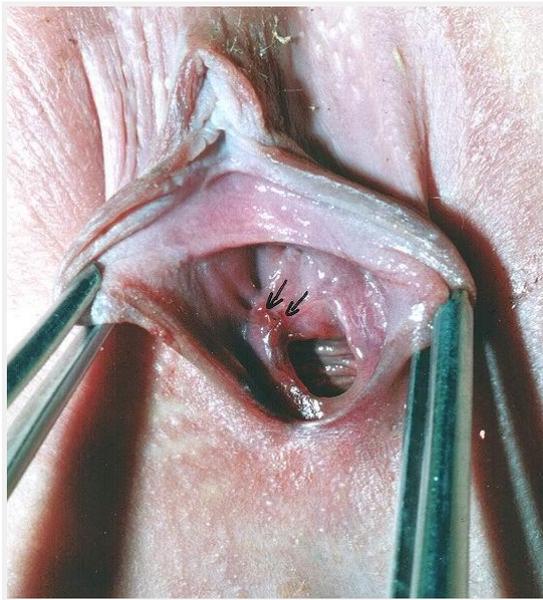
Figure 3. Presence of large areas of burns.

At the level of the mesogastric region it was possible to detect the presence of some areas of de-epithelialization varying in shape from punctiform to elongated, ranging in size from a few mm to about 1.5 cm, arranged in the context of an area of about 7x5 cm on which they appreciated each other, in addition to some thin blackish streaks arranged obliquely from top to bottom and from right to left. (Figure 4).



**Figure 4.** Detail of the presence of some thin blackish streaks.

The examination of the external genitalia showed an annular hymen evidently haemorrhagic at the level of the right hemicycle, and there, at 11 o'clock, it was possible to appreciate a less than full thickness laceration of the most superficial layers of the anterior face, which from the free edge went upwards and to the right about 3-4 mm. (Figure 5)



**Figure 5.** Hymen haemorrhagic at the level of the right hemicycle with laceration.

The examination of the oral cavity and neck were negative, except for the trachea and bronchi whose lumen was filled with a fair amount of reddish mucous material.

The lungs, normally shaped, appeared heavy and dark red in color; reddish liquid mixed with dark blood emerged from the section.

The histological examination highlighted the presence of alveoli filled with amorphous acidophilic material in the context of which numerous red blood cells were recognized, areas with a chambered appearance due to the partial destruction of the interalveolar septa, while the bronchial mucosa presented with extensive desquamation associated with edema and stratification of blackish foreign material.

The sample of the hymenal membrane was also of interest, which on histological examination appeared flaking in the most superficial layers, with congestion and vascular dilation, associated with the presence of small and localized hemorrhagic extravasations.

Finally, the carboxyhemoglobin dosage was equal to 3.8%, slightly higher than the physiological one (0.1-2.0%); while the analysis of clothing was negative for traces of combustion accelerating substances.

The investigations carried out allowed us to ascertain that the corpse presented the unequivocal signs of heat injury, represented by more or less superficial burns of various degrees and entities, sometimes with an appearance defined as "leopard skin", partial burning of the hair formations of the head and of the face and destruction of much of the clothing worn by the victim.

The presence of flittene with serous content was a clear sign of a vital reaction of the tissues and therefore the demonstration that the damage caused by heat occurred in the subject alive.

Having said that, the considerable extent of the heat injuries found on the little girl's corpse would have been sufficient in itself to justify her death; moreover, the scarce quantity of the flittene detected on the body surface was indicative of a death which occurred in a short time as a consequence of a reflex due to painful stimulation of the sensory nerves.

To support this hypothesis was also the finding of a rather low value of carboxyhemoglobin (3.8%), which just above the physiological one was indicative of the fact that the victim breathed the combustion gases for a limited time.

In the determinism of death, we believe in any case that the inhalation of very hot air had a non-negligible role, having generated an intense congestion of the respiratory tract (larynx, trachea, bronchi and lungs), with consequent production of a marked pulmonary edema, demonstrated from the formation of the foamy fungus that emerged from the oral cavity of the corpse as well as from the results of the histological examination.

The histological investigation also highlighted, in the sections of the lung parenchyma, the presence of modest layers of blackish foreign material that could well be referred to the micro corpuscles derived from the combustion of the burning brush.

On the basis of these elements and considering the absence of other injuries that could in some way have had a causal or concausal influence in the determinism of death, it was necessary to affirm that the cause of the death of the young victim was respiratory insufficiency and a thermal shock produced by the exposure to intense heat.

The findings unearthed from the examination of the external genitalia were overall indicative of an attempted sexual assault of which the little girl was the victim in the period immediately preceding her death.

In this regard, the literature reports that vulvo-vaginal penetration in a girl between six and eleven years is possible, but the disproportion of the size of the genital organs is generally such as to produce as a consequence large tears of the vulvo-vaginal wall, of the perineum. and of the rectal wall, with the formation of major hemorrhages [20,21].

The absence of such evidence on the victim's body made it possible to hypothesize that the aggressor, realizing the impossibility of being able to abuse it easily, gave up on his intent, causing only the minor injuries highlighted during the external examination.

Finally, a find of considerable interest consisted of the relief, at the level of the mesogastric region, of some de-epithelialization, arranged in the context of an area of about 7x5 cm, on which it was also possible to appreciate some thin blackish streaks arranged obliquely from top to bottom and from right to left.

The complex of these aspects, which can be framed in the context of superficial excretory phenomena, was extremely suggestive of a modest blunt action that could well take place in the phases preceding the fire.

This injury, due to its specific morphological characteristics, could be attributable both to a direct contact of the abdomen on the rough surface of the ground (preliminary fall of the small victim to the ground?)

And to a slight compression exerted, for example, with a foot shod on the ground. abdomen of the little victim with the intent to immobilize her, to prevent her from escaping the violence.

### 3. Discussion

Ultimately, on the basis of the elements gathered, it was possible to hypothesize the following damaging dynamic: the little girl, after having gone away with her attacker who had convinced her to follow him on a pretext, had first been the victim of an attempted sexual violence by the latter; later, immobilized by placing a foot on the slender abdomen, she was covered with brushwood which the aggressor had set on fire, intending, through this last act, to ensure the consequent suppression of the victim himself to avoid being identified which the author did.

This reconstruction of the criminal events, proposed to the investigating magistrate, was confirmed in every passage by the confessions made by the murderer, during the various degrees of trial, so much so that the final sentence of the Court of Assise, reported in full the specific steps of the medical report -legal: "(...) the child was killed with a fire without accelerating substances, but with the simple use of brushwood collected at the last moment.

This argues for a murder that is the result of the need to get rid of the uncomfortable victim, avoiding her possible testimony. (...)

It is not sustainable that the lighting of the fire was aimed exclusively at the destruction of the corpse since the agents foreshadowed the previous death of the victim.

They reported the purpose of the child simply fainting, to the point that she (...) to prevent any movement he had placed a foot on the victim's lying body.

For this purpose, it has been argued that murder determined by the desire to satisfy one's sexuality is not premeditated, where evidence is lacking on a procedural level that the primary and exclusive objective of the criminal action was the killing of the victim. (...) the same have never asserted that the intention to start the fire arose as a result of the erroneous belief that the child had already died "Ultimately, once again, the important role played by an accurate forensic investigation is evident, in every step (inspection, autopsy and laboratory tests) and not least the intuitive ability of the experts involved in the study of the case, especially in the event that the historical - circumstantial data is inaccurate, incomplete and not yet ascertained [22,23,24,25].

Moreover, even the elements apparently of little importance if not correctly inserted in the operating context and not adequately interpreted, could weave the cause of deductions that are often very far from the reality of the events.

Only an exhaustive technical investigation conducted by experts can represent a valid element for a fair system of justice which can then in turn use it to issue equally valid and scientifically supported judgments [26,27].

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