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## Case Report

# Decubitus ulcers and ligature marks as evidence in a homicide case



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#### ARTICLE INFO

Article history:
Received 22 December 2014
Received in revised form 24 April 2015
Accepted 21 June 2015
Available online 29 June 2015

Keywords:
Decubitus ulcers
Domestic violence
Homicide
Malnourishment
Neglect
Torture

#### ABSTRACT

When abuse, maltreatment and neglect are suspected, a proper physical examination is essential. This is even more important at autopsy, when there is no possibility to gain information from the alleged victim and where the forensic pathologist has to link the evidenced signs or sequalae of abuse with the possible manner and cause of death. This case report presents the results and conclusions of the medico-legal autopsy of a 30-year-old woman found dead in her fiancé's home. The conditions and material evidence found on scene aroused doubts on the cause and manner of death. Dermatological signs found on the corpse (abrasions, contusions and decubitus ulcers) suggested a history of domestic abuse and neglect that was further confirmed by a detailed macroscopic and microscopic examination of the body. An insight into the woman's medical history further implied the possibility of long-term domestic violence. The forensic pathologist reported bronchopneumonia as the main cause of death, provoked by the combined effect of malnourishment, deliberated immobilization and neglected decubitus ulcers. This case is uncommon as it presents the homicide of a young woman caused by a prolonged abusive behaviour associated with complete neglect of her aggravating health conditions and provoked injuries.

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### 1. Introduction

The assessment of signs of torture, maltreatment and neglect (intentional and unintentional failure to provide sufficient care) has become one of the essential tasks forensic pathologists are faced with, especially in clinical forensic practice [1]. A variety of features must be taken in consideration during such physical examinations conducted either at autopsy or during clinical practice. These range from dermatological signatures of torture and maltreatment, musculoskeletal lesions, neurological signs, to injuries affecting the cardiovascular, urological, digestive and gynaecological system [2]. Their proper interpretation can be very difficult, since they can be completely nonspecific, mimic signs of accidental or pathological injuries [3–5] or leave no long-term marks on the body [6]. In such situations all the minor and major lesions should be analysed with care and holistically linked with the reported manner of trauma and, if existent, description of events surrounding the subject's death/injury. The subjects of these types of maltreatment are most often detainees, victims of war conflicts and trafficking in human beings, children and elderly, thus persons who have found themselves in some type of oppressed position, deprived of their liberty and/or dependent on the care of third parties. Often a combination of abuse and neglect can be observed in these victims, especially in children and elderly. Contrary, neglect (with or without abuse) of physically and mentally sane young adults in a domestic environment is uncommon and rarely discussed in literature.

We present a case where signs of neglect and abuse have been observed in a young woman who died in her fiancé's home and which have been linked to the woman's cause of death, allowing the conviction of the perpetrators of homicide. The importance of a detailed physical examination of lesions, not common for younger individuals (especially in form of decubital ulcers) and of their causal relationship is evidenced. We also discuss the importance of the forensic pathologist during equivocal death investigations, which are often open to interpretation until the final collection and interpretation of data collected at sight and at autopsy.

#### 2. Case history

The death of a young woman was reported to the coroner – a specialist in legal medicine, who went on site to attest the circumstances and cause of death. The corpse of the woman was found in a bedroom in her fiancé's home, lying on a bed on her right side. The external examination performed on site revealed the wasted conditions of the body, marked by different types of skin injuries (Fig. 1a). Although it was suggested that death occurred as a consequence of a malignant disease or drug overdose, the

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Fig. 1. Crime scene photos (a). The conditions and position of the body at the crime scene (b) (c). Adhesive tape, linen stripes, blacked out windows at the crime scene suggested seclusion and isolation.

unusual circumstances found at the scene and no preview of any medical history aroused reasonable suspicion that the death of the young woman was due to neither drugs nor natural causes.

The inspection of the scene revealed evidence that suggested a condition of retention and isolation. At the scene, material signs suggesting binding (adhesive tape and linen straps) and seclusion (windows blacked out with black canvas and inexistence of telecommunication devices in a room located remotely from the rest of the household) were found (Fig. 1b and c). Clean clothes were worn over the body and its injured areas and no underwear was present, suggesting manipulation of the corpse before the arrival of the coroner.

#### 2.1. External examination

The autopsy revealed the exhausted corpse of a 30-year-old woman, measuring 164 cm and weighting approximately 47 kg (later, data gained by police revealed that the weight of the woman months prior to death was around 80 kg). The external examination of the body evidenced multiple skin lesions (Fig. 2). In total, three different types of injuries were documented: (i) contusions, (ii) abrasions and (iii) decubitus ulcers (pressure sores). The injuries involved different body regions: parchment-like circumferential abrasions, covered with scabs were found on the neck (15 cm  $\times$  0.5 cm), around the right and left wrist and left ankle and all corresponded to ligature marks. An additional abrasion has been documented on the dorsal aspect of the third finger of the right hand. Longitudinal contusions were documented bilaterally along the calves and medial tights, with several minor contusions on the left hand, left upper arm and dorsum of the left hand. Necrosis was documented on II and III fingers of the left hand, while decubitus ulcers were observed on the left elbow, sacro-coccygeal region, both gluteal regions and right tight, left hip as well as left ankle and right foot and on the back.

The injuries evidenced on the body differed in their extent and timing. Circumferential abrasions on the neck, wrists and ankles were covered in part with reddish-brown scabs. The different colouration of contusions, ranging from bluish to green colouration, suggested a different timing of the injuries.

Decubitus ulcers showed different staging: coccyx, sacrum and both gluteal regions showed the most advanced stage of ulcers with involvement of subcutaneous fat. The decubitus of the sacrococcygeal region involved an area measuring  $13 \text{ cm} \times 9 \text{ cm}$  with necrosis, which at some points reached the superficial fascia. The ulcer was conjoined with an  $8 \text{ cm} \times 4 \text{ cm}$  crater-like necrotic defect located in the upper medial quadrant. Another massive crater-like defect with granulating tissue filling its base was found on the left gluteal region, radiating over an 8.3 cm area. The decubitus changes of the described area were stage II to III, while a third, stage III necrotizing ulcer was documented on the gluteal right medial lower quadrant. Ulcers on the left elbow  $(3 \text{ cm} \times 1.5 \text{ cm})$  and a larger ulcer on the left ankle  $(9 \text{ cm} \times 1 \text{ cm})$ cm) were staged II. Stage I ulcers were documented on the left iliac crest (5 cm  $\times$  1 cm), right tight (at the level of the trochanter major covering a 6 cm area), side of the right foot and on the back (between the posterior scapular line and vertebral column).

#### 2.2. Internal examination

The marked thinness of the body was evident already with external examination (scaphoid abdomen, sunken eyes, reduced buccal fat pad), and further confirmed by internal examination, which showed a thin anterior abdominal wall with reduced adipose tissue surrounding the inner organs. The digestive tract

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