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Abstract

Assaults by patients against healthcare providers are a worldwide increasing phenomenon. Mental health professionals have the highest risk of being attacked at work in acute facilities and rehabilitation wards. Verbal abuse or intimidating behaviors represent the most common types of violence. Fatal assault by psychiatric patients has been rarely reported in the literature. We present a case of a female psychiatrist fatally stabbed in her office in a Mental Health Center. At the autopsy, seventy stab wounds were found: four wounds of the neck, fifty penetrating wounds of the thorax, three wounds of the abdomen, six wounds of the lumbar region, and seven wounds of the upper arms including defense injuries. The cause of death was massive blood loss due to multiple stab wounds. The perpetrator was a 44-year-old male patient who had been referred to the victim after a previous admission to hospital following experiences of suicidal ideation and confusion. The extreme and unmotivated violence in a not-acute setting were notable. A borderline-antisocial personality disorder was later diagnosed by forensic experts. This case emphasizes the significant occupational risk for mental healthcare staff to sustain life threatening injuries or death, with implications for training of clinicians, and strategies for preventing aggressions.

Keywords: Workplace violence – Psychiatry – Violence – Stab wounds

Introduction

According to the United States *National Institute for Occupational Safety and Health* workplace violence (WPV) is "the act or threat of violence, ranging from verbal abuse to physical assaults, directed toward persons at work or on duty".
Healthcare workers (HCW) have a higher risk of injury than those in other occupations [1].
According to a Bureau of Labor Statistics report, HCWs in the U.S. suffered between 15,000 to 20,000 acts of violence in the workplace every year from 2011 to 2013 [2].
The actual rate of violence incidents involving HCWs is probably much higher than what is published in the literature owing to underreporting. The highest prevalence of assaults occurs with nurses, physicians, and patients' care associates [3].
The highest-risk departments are the emergency departments (EDs), geriatric wards, mental health, rehabilitation, and acute/specialty care wherein assaults perpetrated primarily by patients, their relatives, or visitors occur [4]. In inpatient psychiatric settings, the rate of assaults by patients against mental health care providers is a growing concern.
Verbal abuse is the most common form of violence, punctuated by episodes of intimidation, insults, verbal harassment, and threats by phone calls, emails, and stalking [5].
Most often this abuse has psychological consequences for the HCWs (such as, missed days of work, or assignments to limited duty, or anxiety, depression, or development of a post-traumatic stress disorder) [6].
Physical aggression tends to prevail in psychiatric settings. Mental HCWs are exposed to life-threatening incidents (e.g., pushing, punching, kicking, and sexual abuse) that can lead to severe injuries, for example, fractures, lacerations, bruises, loss of consciousness [7]. In rare cases, even the death of a physician has been reported, but the literature about fatal assaults by patients is quite limited [8-10]. Goodman et al. reported that 26 physicians were murdered by patients between 1980 and 1990, with a rate of 15/100,000 [11].

In this paper, we present a case of a psychiatrist who was fatally assaulted in an act of extreme violence by a patient in her Mental Health Center's office.

Case report

In a Mental Health Center, a 53-year-old female psychiatrist was fatally stabbed in her office by a 44-year-old male patient. The man had been referred to the psychiatrist after a previous admission to the ED following experiences of suicidal ideations, psychomotor agitation, and mental confusion. Her colleagues rushed to her aid, but she died despite receiving cardiopulmonary resuscitation. After the attack, the perpetrator was stopped by a nurse who was still in the office and, after threatening the bystanders with the knife, the perpetrator remained in the room where he was arrested by the police.

At the death scene, her body was lying on the floor between the desk and a cabinet, in a prone position. There were traces of blood all over the room. Multiple stab wounds were found on the trunk of the body, which coincided with blood-soaked lacerations of her clothes. A single-edged knife, with a bent 14.5 cm long and 2.5 cm wide blade, was found next to her office door. A piece of the knife's wooden handle was found near the weapon (Fig. 1).

External examination and autopsy findings

The body had a weight of 67 kg and a length of 157 cm. An external and internal examination confirmed 70 sharp wounds to the neck (4 wounds), chest (8 wounds), back (42 wounds), abdomen (3 wounds), lumbar regions (6 wounds, bilaterally), and upper limbs (7 wounds) (Fig. 2).

The wounds were as follows:

Neck:

- Two wounds on the anterior side, one on the right side, one on the left supraclavicular area;

Chest:

- Three superficial stab wounds on the left side;
- Five penetrating wounds on the right side: one through the VII intercostal space → fractures of the VI and VII ribs→ right lung; one through the VIII intercostal space → right lung; through the IX intercostal space → right lung; one through the XI intercostals space → downward to the diaphragm → liver;

Back (Fig. 3):

- twenty-eight wounds penetrating the right pleural cavity and the right lung, aorta, and spleen;
- fourteen more superficial wounds through muscular layers;

Abdomen:

- two penetrating wounds in the right hypochondrium and through the liver;
- one penetrating wound in the mesogastric region;

Lumbar region (all penetrating wounds):

- three in the left paravertebral area;
- one on the posterior midline;
- one in the right paravertebral area;
- one next to the right flank;

Upper limbs (all penetrating stab wounds):

- Right upper limb: one wound on the scapulo-humeral region; three wounds on the posterior forearm; one wound on the axillar area;
- Two superficial wounds on the left hand.

Bruises were found on the right arm and right leg.

The stab wounds had a single pointed end, and in places showed a unilateral "fish tail" split (on the right hypochondrium, left back, left hand, and right arm). These characteristics matched with the knife found at the crime scene. Most of the stab wounds were caused by a downward directed thrust with the sharp edge down. Most of the stab wounds on the victim's back showed that the pointed end was turned toward the right side.

Dissection showed bilateral haemothorax, eighteen penetrating stab lesions of the lungs, five wounds of the aorta (arch and thoracic segment), and penetrating injuries of the liver, kidneys, and spleen. There was no sign of sexual assault. The cause of death was massive blood loss due to multiple stab wounds.

Reconstruction of the assault

Everything at the crime scene - the distribution of bloodstains, the position of the furniture, and the morphology of the injuries - suggested that the victim was first attacked while sitting. The defense wounds on her forearms and hands and the numerous stab wounds on her trunk reflected the escalation of the aggressor's violence against the woman.

The aggressor's toxicological analysis was negative for alcohol, drugs, and toxic substances. A clinical examination revealed blood on his hands, with superficial wounds on his left hand. A few bruises were found on his left scapula, flank, and knee. He stated that he had brought the knife with him that morning without planning to kill anyone.

His psychological profile and psychiatric history were investigated by forensic experts. Severe depression was reported during the week before the murder, without any triggering life event or any hint of schizophrenia. A borderline-antisocial personality disorder was diagnosed. However, no reliable motive for such a violent aggression could be identified.

Discussion

Aggressions in health care settings can be classified into two main categories: 1) non-physical violence, manifesting in psychological violence or verbal abuse (e.g., threats, harassment, stalking) and frequently exhibited by lucid patients in response to excessive treatment expectations, dissatisfaction with therapies, and intolerance for long waiting times; and 2) physical acts, most often executed by patients with cognitive alteration , psychiatric disorders or who are under the influence of alcohol and drugs [12].

Many mental conditions can induce behavioral disinhibition and irritability, as well as lead to motor agitation and aggressiveness—symptoms that account for the largest category of hospitalizations [7, 12].

Non-physical violence is more frequently observed in geriatric units, metabolic medicine, and the ED. Physical violence by patients is more prevalent in acute psychiatric wards, neurological, and post-surgery intensive care units. Women tend to be both verbally and physically threatened more often than men [12].

The Royal College of Psychiatrists' Annual National Audit of Violence analyzed 131 psychiatric wards across England and Wales and reported that 58% of nurses were subjected to incidents; 46% of them had been physically assaulted during the previous year [13].

A one-year survey of Veterans Health Administration facilities reported that the possession of weapons was common among perpetrators, though used in only1.5% of assaults [14].

The literature about incidents occurring in psychiatric inpatients and therapeutic communities is not extensive [15].

Forensic psychiatry settings have a substantially higher rate of violence (47.7%) than acute psychiatric wards (22.1%) or general psychiatric wards (26.2%) [16].

In Italy, the annual prevalence of workplace violence (WPV) against all health workers in general hospitals ranges from 48.6% to 65.9%. In 2014, an Italian study showed that assaults were mostly carried out during the day in psychiatric departments, and in the evening or at night in EDs. In the majority of cases, WPV occurred in patient rooms or exam rooms, and less than half of them occurred while the worker was alone with the perpetrator [12].

Life-threatening physical injuries are rarely reported, and they are fatal only in extreme cases [17, 18].

A recent review reported 33 fatal aggressions on mental HCWs (psychiatrists, psychologists, nurses, case workers) by their patients. The majority of perpetrators had a diagnosis of schizophrenia. The setting of the homicide was typically during visits to the patients in residential facilities (33,3%), public clinics (18.2%), private offices (15.2%), private (18.2%) and public hospitals (12.1%), and, in one case, while in transit with the patient (3,0%). Homicides were by gunshot (42.4%), beating (12.1%), beating and stabbing (9.1%), and beating and strangling (3.0%) [8].

An Italian study by Lorettu et al. described 18 murders of physicians between 1988 and 2013, of which six were mental HCWs. All homicides were perpetrated by male psychiatric patients diagnosed with psychosis (57.1%), bipolar disorders, or depression (28.6%) and drug abuse (14.3%) [19].

Medical history, age, gender, and diagnosis are well-established violence predictors over the long term, while current clinical presentation, substance abuse, and psychopathological variables may be more significant contributors in the short term [20].

In this paper, we present a rare scenario in a forensic setting. This is the first case report in Italy of such a cruel murder of a mental HCW in the workplace, with regard to the severity of the victim's injuries and modus operandi factors.

The number of stab wounds raised the possibility of "overkill" homicide, which refers to the infliction of massive injuries by a perpetrator that far exceed the extent necessary to kill the victim. Overkill generally points to a strong emotional conflict between the perpetrator and the victim that may have a long history (e.g., in sexually motivated homicides) [21].

In this case, however, some of the most important "predictors" of violence to HCWs were absent: the crime scene was not an acute setting, and the culprit had never been the victim's patient. Neither the motive of this overkill, nor the assailant's rage escalation against the HCW, previously unknown to him, was fully explained.

Generally, the most violent outbreaks do not occur abruptly, but rather after a period of escalating agitation, or changing behavior. Trigger factors for violence episodes include being forced to take medications and involuntary hospitalization [16]. The patient's aggressiveness can be self-directed. In some cases, there could be no significant elements in the decedent's personality or in recent behavior that would indicate a suicide as the final escalation of a psychic disorder. [22].

In this particular case, no trigger events seemed to have occurred, nor had any previous episodes of aggression by the patient been reported. This confirms that the symptoms of psychiatric illness, rather than the diagnosis of psychiatric illness, are themselves likely to confer the risk of violent behavior [9].

Conclusion

WPV against HCWs is a worldwide phenomenon. Nevertheless, a comprehensive description of fatal and non-fatal assaults or the full range of incidents is needed, because no consistent national data exist in any country [23].

The case presented here shows that mental HCWs must be aware that no particular psychiatric setting is free from assault risk. Therefore, it can be particularly tricky to predict if and when an unfamiliar and unstable patient would assault a mental health professional.

WPV against HCWs employed in psychiatric settings has to be considered a "sentinel event" requiring the adoption of preventive measures, protection of workers, and accurate monitoring. Therefore, the development of violence minimization programs must be fostered, together with the recognition of "warning signs" that may precede violence (e.g., psychomotor agitation, combative posturing, guardedness, paranoid remarks, low frustration tolerance, emotional liability, and irritability).

Key points

1. Workplace violence (WPV) is "the act or threat of violence, ranging from verbal abuse to physical assaults, directed toward persons at work or on duty".
2. Mental health professionals have the highest risk for being attacked at work in acute psychiatric wards and long-term-care units; the victims are mainly nursing staff.
3. Verbal abuse is the most common form of violence; physical aggression tends to prevail in psychiatric settings, most often perpetrated by patients affected by psychiatric disorders, or with history of substance abuse.
4. Death or life-threatening physical injuries of health care workers are rarely reported in literature.
5. The development of violence minimization programs must be fostered, together with the recognition of "warning signs" that may precede violence (e.g., psychomotor agitation, combative posturing, guardedness, paranoid remarks, low frustration tolerance, emotional liability, and irritability).

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval This article does not contain any studies with human participants or animals performed by any of the authors.

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Figure Captions

Fig. 1 The weapon: a single-edged knife, with a bent 14.5 cm long and 2.5 cm wide blade; a piece of the knife's wooden handle was found near the weapon (orange arrow)

Fig. 2 Sketch depicting the number and the sites of stab injuries

Fig. 3 Stab wounds of the back

Figure 2

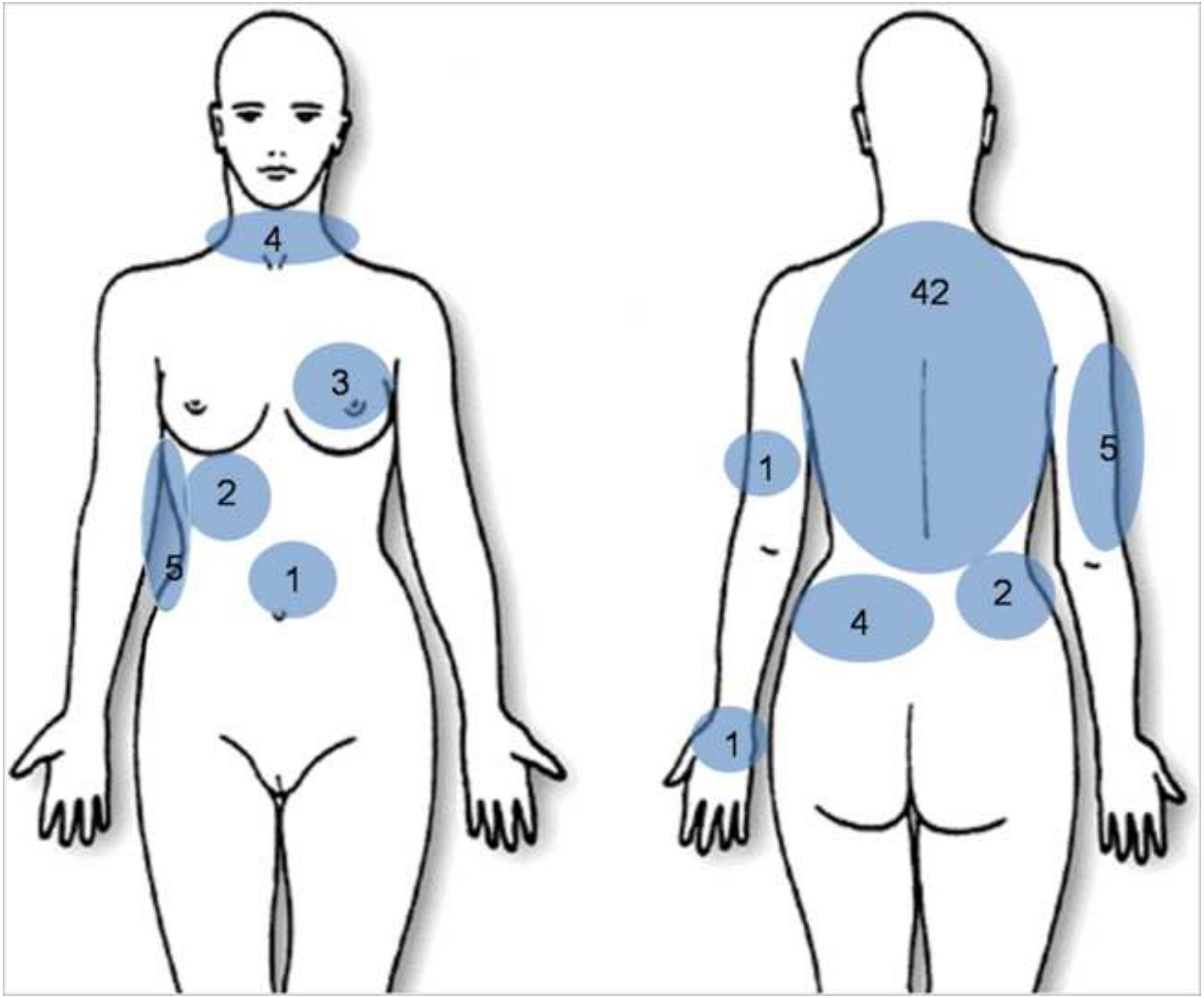

Figure 3

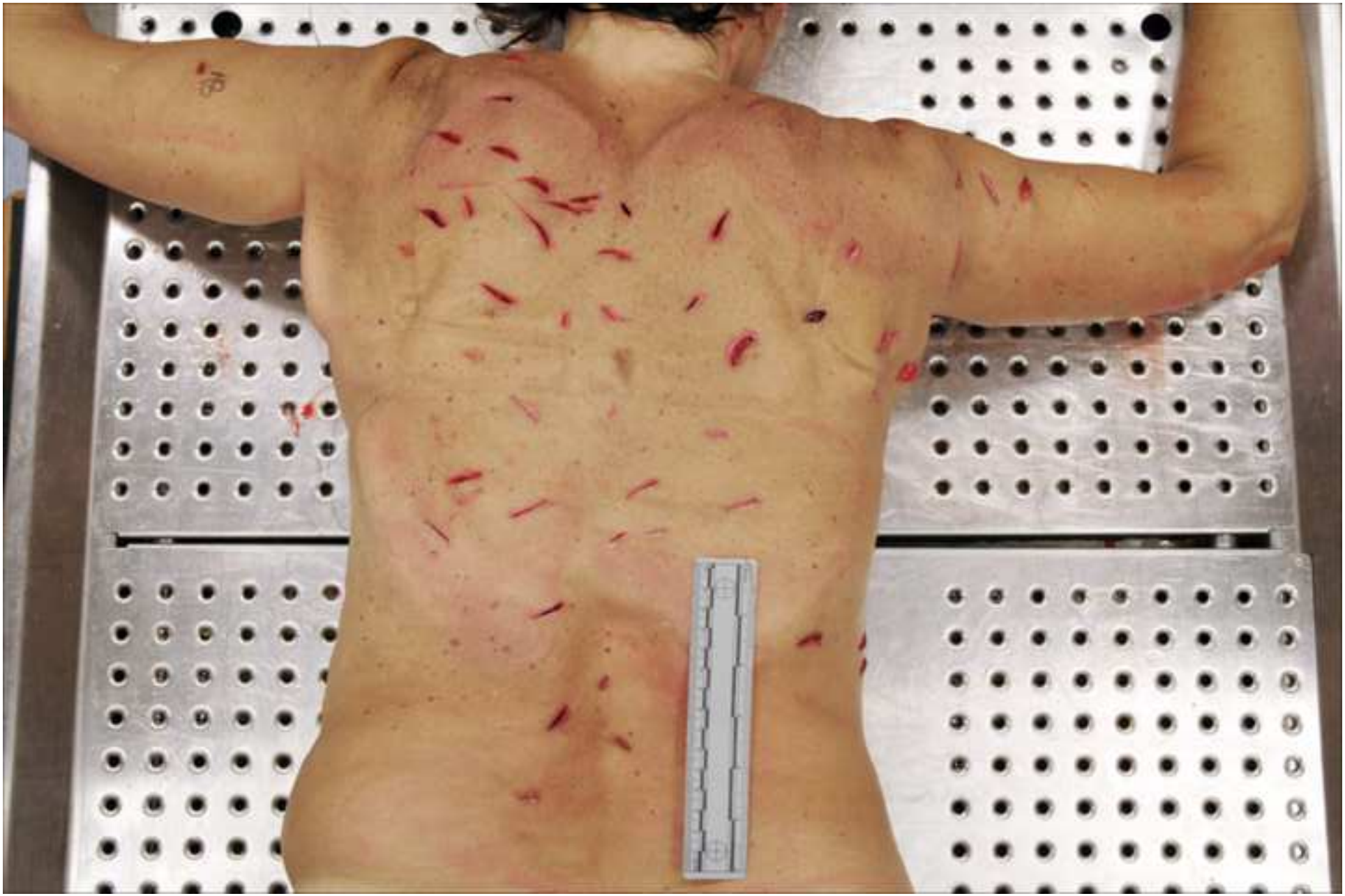

Figure 1