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# Unusual torture methods and mass murders applied by a terror organization

# [Bir terör örgütü tarafından uygulanmış alışılmadık işkence metotları ve toplu katliamlar]

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#### Abstract

This study aims at describing autopsy findings of 19 victims killed by various torture methods applied by a terror organization after they had been kidnapped by this organization and as well as the unusual and unique binding style applied during these killings. The present study also aims at describing the unusual killing method of binding for literature and discussing international descriptions of torture.

#### Keywords:

Torture, terror, autopsy findings, mass murders.

#### Özet

Bu çalışmada, 2000 yılı başlarında İstanbul' da bir terör örgütü tarafından kaçırıldıktan sonra çeşitli işkence yöntemleri ve bu arada özel bir bağlama şekli kullanılarak öldürülen 19 kurbanın otopsi bulgularının ve kullanılmış olan alışılmamış bu bağlayarak adam öldürme yönteminin literatür için tanımlamasının yapılması ve uluslararası işkence tanımlamasının tartışmaya açılması amaçlanmıştır.

#### Anahtar Kelimeler:

İşkence, terör, otopsi bulguları, kitlesel cinayetler.

#### 1. Introduction

Cruel and inhuman behavior of human being toward other humans is as old as the history of humanity. This kind of cruel behavior will have been called "torture" in the future. Torture was used in totalitarian and authoritarian regimes during and before the medieval ages to restrain the opposition, to daunt and threaten people, punish, and force them to confess to crimes in order to gather knowledge and evidence against them or others by various methods. Torture was used as an

interrogative method in almost all countries at the beginning of the medieval period. Opposition to torture, which began at the beginning of the 17th century couldn't eliminate the torture completely. Racist tortures applied by the Nazis in the Second World War, unbelievable tortures to the slaves applied by the Vietnamese and sadistic tortures applied in Bosnia and Herzegovina could not be prevented. Apart from this, in many countries systematic or individual actions of

torture against civilians cannot be eliminated completely (1-5).

Massacres and serial murders by schizoid character in civilian life or in wars are the results of social rebellions, insanities or terrorist activities (6-9).

The latter of these, terrorism, is still one of the biggest threats to democratic societies all over the world. Terrorism is the use of violent, quick and unexpected actions in a planned and/or systematic way by an individual or group to create fear and insecurity in others. But terrorism also can be performed over a long period. Apart from these characteristics, terrorism can be described as every kind of violent action- characterized only by being harmful physically, psychologically and social structure having a symbolic meaning, belonging to the individuals or present social system on which the violence was applied, but also creating fear, basic insecurity, intimidation and resulting in misinforming, prejudice, constraints of freedoms - in which individual, criminal, ideological, nonsensical and religious motivations play a role (5-10).

At the beginning of the 2000's Turkey was confronted with victims of terrorism killed in a ruthless manner after they had been tortured by a terrorist organization.

The terrorist organization had kidnapped a number of people from different cities in Turkey to make its religious ideology acceptable, to provide economic resource to the organizations by forcing the people to pay money to them, to punish those who resisted and to threaten others. Various torture methods were applied to these people kidnapped by the organization. One of these torture methods was an unusual method which we first came across in our career. The terrorist organization interred the bodies of the victims into the cellars of the houses belonging to the organization after they had been tormented and killed by this unusual torture method.

The aim of this study is to describe the torture method applied by the terrorist organization to mass murders for literature and to introduce this unusual torture method for discussion.

#### 2. Material and methods

Reports of 19 cases autopsied in Istanbul at the Morgue Specialization Department of Forensic Medicine Institution of, the Ministry of Justice, investigation records and testimonies of the witness's were collected and investigated. Newspaper archives dated the time the event was investigated. The information compiled as a result of these investigations was studied carefully by researching the international literature.

#### 3. Results

The newspapers in Turkey announced an unbelievable massacre in January and February of the year 2000. A terrorist organization had kidnapped and killed approximately 50 people from various cities in Turkey and then interred their bodies into the cellars of the

houses belonging to it. We could only investigate 19 cases of these 50 people on whom autopsies were performed in Istanbul at the Morgue Specialization Department of Forensic Medicine, Institution of Ministry of Justice.

The first 10 corpses of these 19 victims were found in the same house belonging to the terror organization. 8 of them were interred in a top-covered coal cellar, one of them was interred in top-open courtyard and other was interred in the garden of the house. The remaining 9 corpses were found as interred in the garden of a house in another quarter of the city.

All of the victims were male. Their ages ranged from 25 to 54 (mean age:  $35.6 \pm 0.5$ ).

The 10 corpses of the victims found in the first house were bound like a ball by bending their knees to their chests (Figure 1 and 2). These corpses were naked. 2 of them had nylon bags over their heads (Figure 3 and 4).

Regarding the other 9 corpses found in the second house, three of them were dressed. They were knelt down after their hands had been bound to their backs. The ends of the ligatures wrapped around their necks were bound to their feet. All 3 victims were blind folded. The remaining 6 corpses were found un-tied but naked.

In all 10 corpses found in the first house and in the 6 corpses found naked in the second house it has been observed that putrefaction advanced, all of their epidermis peeled, their hairs shed, saponification began, and their faces became un-recognizable. For the remaining three victims found in a dressed position it has been observed that rigor mortis disappeared, livor mortis occurred independent localizations in front and behind of their bodies, intensive petechial spots occurred among the livor mortis bleeding occurred from their mouths and their noses and sign of laundress hand existed on their hands and feet.



**Figure-1.** (Case  $8^{th}$  in table-1): This case was found tied with a nylon ligature around the knees and the back in a knees-on abdomen position

Autopsy findings of corpses which found first house and second house were showed with details at table-1 and table-2, respectively.

Tissue samples for DNA analysis were obtained to identify the victims. It became clear as a result of the

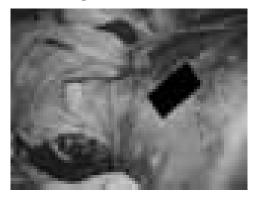
DNA analysis that the 11 victims were the people who had been missing for a period of 2 months to one year.



Figure-2. (Case 9<sup>th</sup> in table-1): The knees were drawn to the abdomen with a ligature tied with a double-line passing under the knees and then extending through the back.



Figure-3. (Case 4th in table-1): Two nylon bags with openings in the apical portions of the head and tied tightly to the neck region by binding to the head were observed



**Figure-4.** (Case 6<sup>th</sup> in table-1): A nylon bag, torn on its upper part and tied tightly on the neck region, covering the head was observed.

It was stated in the autopsy reports that the cause of death in the cases 11<sup>th</sup>, 12<sup>th</sup> and 13<sup>th</sup> found dressed and tied in the second house was suffocation by ligature while in the remaining 16 cases the cause of death was undetermined.

#### 4. Discussion and conclusion

The causes of death in 3 of 19 cases autopsied were determined. The causes of death in the remaining cases

were not detectable. These cases were specified as negative autopsy.

But the style of tying and other traumatic lesions which could not be determined as ante-mortem or post-mortem changes due to advanced putrefaction led us to investigate this matter. We began to search the literature based on this style of tying.

As a result of our research, we discovered "Hogtie" method, a method in which the hands and feet of the victims are tied to their back and also used as a method of making the manic victims ineffective (this method is also known as hobble or "Prone maximal restrain" method). Despite contrary opinions, a lot of death cases during the arrests by this method were reported (11-14).

In other literature, another method used by the Italian mafia to kill people or to transport the cadavers and known as "Incaprettamento" was explained. According to this paper, Incaprettamento is performed with a rope, one end of which is tied in a noose and placed around the victim's neck, while the other is used to secure the victim's ankles behind the back. Death is caused by self-strangulation when it becomes impossible to maintain the legs in this imposed position. Often, the binding of the body is done postmortem, after the victim is strangled with the same rope later used in binding (15).

Although similar methods could be determined in the literature, none of them were identical to the tying style we confronted. So, we could not determine and connect any torture methods with the tying method we found in these cases

When we directed our research to the daily newspapers announcing this unbelievable mass murders and tortures, we learnt that an identical method to the method we were researching exists and this method is known as "Hog tie" or "Hog ball". We learnt that this method, hog tie, was used in during Ottoman Empire period to kill people and that death occurs within at most two hours in people tied in this position (Figure-5) (16-21). Another 2 torture methods, which were used in the same time period, were suffocating the people by ligature and leaving them to die in pain occurred as a result of the fractures of their bones with blunt materials (16).

The mechanism of death in this method of "Hog tie" or "Hog ball", as specified in the literature, is positional asphyxia as a result of the restraint of diaphragm movements and as well as, suffocation of the victim by the ligature passing around his/her neck during the attempts to escape.

We named the cause of death in the first case "hog tie" or "hog ball" and concluded that death in this case was a result of this method causing positional asphyxia. But other contributing mechanisms of death in the cases were considered as follows: In case 1<sup>st</sup>, with fracture on the hyoid bone without any ecchymosis distinguishable around it, suffocation by ligature may have contributed to death. In case 4<sup>th</sup> with 2 nylon bags over his head,

probably lack of oxygen may have contributed to death. In case 6<sup>th</sup> with nylon bag over his head as well as a fracture on his hyoid bone without any distinguishable ecchymosis around the fracture, lack of ventilation and/or suffocation by ligature may have contributed to death. In the case #8 with a fracture of thyroid cartilage without any distinguishable ecchymosis, suffocation by ligature may have contributed to death.

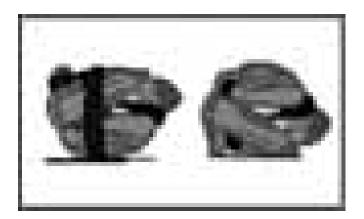


Figure-5. "Hog tie" or "Hog ball". Types of unusual bindings methods of victims

As specified in the autopsy reports the cases 11<sup>th</sup>, 12<sup>th</sup> and 13<sup>th</sup> had died of suffocation with bandage. But the tying method of these cases led us to conclude that positional asphyxia may have been a contributing factor in the mechanism of death. By considering the widespread fractures, the causes of death of the cases from #14 to #19 that were found untied but naked were interpreted as blunt traumas.

These cruelly torture methods was not reported place even in the document of "Manual on the Effective Investigation and Documentation of Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment-The Istanbul Protocol", which describes the torture (23). It was another interesting finding in the Istanbul Protocol that the method we explained was not mentioned in "International Definition of Torture".

Torture was banned in various European Countries during the 18th century and war against torture began with the modern age. The provision that "No one can be tormented, no body can be treated in cruel, inhuman and degrading way, this kind of punishment is not acceptable" is stated in the human rights universal declaration. The same principle was repeated in 1966 in "International Agreement on Civil and Political Rights". Torture is defined in "The United Nations Convention Against Torture - 1984" as follows: "Torture is any physical and/or mental action performed under acceptance or order of an official or public employee to obtain information from a particular person or from third parties, to force the particular person or third parties to confess, to punish the particular person or third parties due to the actions performed by them or to the actions

believed have been to performed by them, to threaten or force a particular person or third party due to any reason from every kind of discrimination by hurting them". Preventing and controlling actions against torture, liabilities of the states about torture and rights of the people exposed to torture were regulated in the same agreement. In 1987, "European Agreement Related to Preventing Torture and Cruel, Inhuman or Degrading Punishment and Behavior" was signed. In 1999, while the same definition of torture was repeated in the "Manual on the Effective Investigation Documentation of Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment- the Istanbul Protocol", detailed information about torture and torture methods are obtained and preventive measures against to torture were listed (23).

As can be seen, the actions performed by the terror organizations are out of the definition of torture. But it would be a better approach to evaluate the action performed rather than who performed it.

As a result of this, we believe that it is a necessity to add the expression of "by the people or organized groups" into the definition of torture stated in The United Nations Convention against Torture- Istanbul Protocol and we are opening this matter up for discussion in the international arena.

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#### References

- Ryn Z. Suicides in the Nazi Concentration Camps. Suicide Life Threat Behav. 1986; 16(4): 419-33.
- Shrestha NM, Sharma B, Van Ommeren M, et.al. Impact of Torture on Refugees Displaced Within the Developing World: Symptomatology Among Bhutanese Refugees in Nepal. JAMA. 1998; 280(5): 443-8.
- 3. Kirschner RH, Hannibal KE. The Application of Forensic Sciences to Human Rights Investigations. Med Law. 1994; 13(5-6): 451-60.
- Gunn J, Taylor PJ. Forensic Psychiatry, Clinical, Legal and Ethical Issues. 2<sup>nd</sup> ed. Anthony Rowe Ltd, Chipennam, Wiltshare. 1999: 924-6.
- Marshall TK. Violence and Civil Disturbance. The Pathology of Trauma, Mason JK eds., 2<sup>nd</sup> ed. Edward Arnold Ltd, London. 1993: 71-8.
- Warren JI, Hazelwood RR, Dietz PE. The Sexually Sadistic Serial Killer. J Forensic Sci. 1996; 41(6): 970-4.
- Vernon J, Gebert MS. Practical Homicide Investigation. CPR Press, Boca Raton. 1996: 732-786.
- Lykes MB. Terror, Silencing and Children: International, Multidisciplinary Collaboration with Guatemalan Maya Communities. Soc Sci Med. 1994; 38(4): 543-52.
- Wilson PR. 'Stranger' Child-Murder: Issues Relating to Causes and Controls. Forensic Sci Int. 1988; 36(3-4): 267-77.
- 10. Oral G, Ortakoylu L. Terror. Clinical Forensic Medicine, Istanbul. 2001; 1(2): 113-8.
- Chan TC, Vilke GM, Neuman T, Clausen JL. Restraint position and positional asphyxia. Ann Emerg Med, 1998 Jul; 32(1): 116-8.

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- O'Hallaron RL, Frank JG. Asphyxial Death during Prone Restrain Revisited: A Report of 21 Cases. Am J Forensic Med Pathol. 2000: 21(1): 39-52.
- O'Hallaron RL, Lewman LV. Restrain Asphyxiation in Exited Delirium. Am J Forensic Med Pathol. 1994: 15(3): 266.
- Schmidt P, Snowden T. The Effects of Positional Restrain on Heart Rate and Oxygen Saturation. J Emerg Med. 2000; 19(3): 289-91.
- 15. Fineschi V, Dell'Erba AS, Di Paolo M, Procaccianti P. Typical Homicide Ritual of the Italian Mafia (Incaprettamento). Am J Forensic Med Pathol. 1998; 19(1): 87-92.
- 16. Hizbullah Terörü [Hürriyetim, İnternetim Web site]. January 23, 2000. Available at: http://arsiv.hurriyetim.com.tr/hur/turk/00/01/23/yazarlar/46yaz.ht ml Accessed: September 21, 2002.
- 17. Hizbullah [Garaldi, Sabah Web site]. January 23, 2000.
  Available at:
  <a href="http://garildi.sabah.com.tr/sayfa.cgi?w+30/sabah2000/0001/20//g01.html">http://garildi.sabah.com.tr/sayfa.cgi?w+30/sabah2000/0001/20//g01.html</a> Accessed: September 21, 2002.

- 18. Domuz bağı [Garaldi, Sabah Web site]. January 23, 2000. Available at: <a href="http://garildi.sabah.com.tr/sayfa.cgi?w+30/sabah2000/0001/23/t/g01.html">http://garildi.sabah.com.tr/sayfa.cgi?w+30/sabah2000/0001/23/t/g01.html</a> Accessed: September 21, 2002.
- 19. Hizbullah Vahşeti [Garaldi, Sabah Web site]. January 23, 2000. Available at: <a href="http://garildi.sabah.com.tr/sayfa.cgi?w+30/sabah2000/0001/24/t/g01.html">http://garildi.sabah.com.tr/sayfa.cgi?w+30/sabah2000/0001/24/t/g01.html</a> Accessed: September 21, 2002.
- Domuz bağı [Milliyet Web site]. January 23, 2000. Available at: http://www.milliyet.com.tr/2000/01/22/haber/hab02.html

   Accessed: September 21, 2002.
- 21. Hizbullah [Milliyet Web site]. January 23, 2000. Available at: http://www.milliyet.com.tr/2000/01/20/haber/hab000.html
  Accessed: September 21, 2002.
- 22. Human Rights Foundation of Turkey, Manual of Effective Investigation and Documentation of Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment, "The Istanbul Protocol". Publications of TIHV (HRFT). 2001: 1, 56-63.

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Table-1. Autopsy findings of 10 corpses found in the first house.

Case No	Findings of external examination	Findings of internal examination
1	<ul> <li>Ligature (nylon clothesline) and its marks around left wrist, under the both of axillaries pits and around neck*</li> <li>Ligature marks (there was not ligature) on the left side of abdomen, on the inner sides of both of the legs and thighs, around right ankle *</li> </ul>	<ul> <li>Separation of the hyoid bone*</li> <li>Putrefaction findings**</li> </ul>
2	<ul> <li>Ligature (nylon clothesline) and its marks around neck (perpendicular to the body axis and wrapped all around the neck) and chest wall*</li> <li>Ligature marks (there was not ligature) on the back of the neck, cheeks and nose-tip**</li> </ul>	- Putrefaction findings**
3	- No ligature marks or other traumatic lesions were detected due to putrefaction.	- Putrefaction findings**
4	<ul> <li>Double line ligatures (pieces of clothes) and its marks around neck(perpendicular to the body axis and wrapped all around the neck)*</li> <li>Two nylon bag covered the head (openings in the apical portions) and tightly tied around the neck*</li> <li>Double line ligatures (nylon clothesline) and their marks on the knees (knees was drawn to the abdomen), back of the waist, around neck and both legs*</li> <li>Blunt traumatic wound (3 cm in length, with irregular borders) on the vertex</li> </ul>	<ul> <li>A hematoma (3 cm diameters) under the wound on the vertex</li> <li>Fractures on both horns of the hyoid bone**</li> <li>Putrefaction findings**</li> </ul>
5	<ul> <li>The ropes and its marks around the both of wrists*</li> <li>Double lines ligatures marks (there was not ligature) on the outer side of left thigh and on the upper left side of back*</li> <li>Double lines ligatures marks (there was not ligature) around neck(perpendicular to the body axis and wrapped all around the neck)*</li> </ul>	- Putrefaction findings**
6	<ul> <li>Two nylon bag covered the head (openings in the apical portions) and tightly tied around the neck*</li> <li>Ligature marks (there was not ligature) around neck*</li> </ul>	<ul> <li>Separation on the right horn of the hyoid bone and on both cornuses of thyroid cartilage.</li> <li>Putrefaction findings**</li> </ul>
7	<ul> <li>Two blunt traumatic wounds on the anterior right parietal region (1 and 2.5 cm in length, having tissue bridges between wound labias)</li> <li>Ligature marks (there was not ligature) around of the head at the level of the both of the ear lobes*</li> <li>Ligature marks (there was not ligature) around of the waist*</li> <li>Ligature marks (there was not ligature) around of the neck*</li> </ul>	- Putrefaction findings**
8	<ul> <li>Ligature (nylon clothesline) and their marks around the knees (knees was drawn to the abdomen), back of the body, and leg regions*</li> <li>Double lines ligatures marks (there was not ligature) around of the head, on the both of the eyes and forehead*</li> <li>Ligature (nylon clothesline) and their marks around of both of the wrists*</li> <li>Ligature marks (there was not ligature) on both soles</li> </ul>	<ul> <li>Fracture on the left cornu majus of the thyroid**</li> <li>Putrefaction findings**</li> </ul>
9	<ul> <li>Ligature marks (there was not ligature) around the head at the level of both eyes, on the ears and occipital region*.</li> <li>Double line ligatures (nylon clothesline) and their marks on the knees (knees was drawn to the abdomen), back of the waist*</li> <li>Two blunt traumatic wounds (1.5 cm in length) on the right eyebrow and (1 cm in length) on the dorsa of the nose.</li> <li>Several vertical and sagittal cuts in the skin intersecting each other on the anterior side of the chest wall and on the back region between the lower end of scapulas and gluteus.</li> </ul>	- Putrefaction findings**
10	<ul> <li>Wide tissue losses due to putrefaction, on which bony process could be seen was present on the front sides of the right arm and forearm, on the right side of the neck and on the right costo-lumbar region.</li> </ul>	- Putrefaction findings**

<sup>(\*)</sup> In those cases, it could not distinguished whether echymosis exist under/around defined lesions. (\*\*) In those cases, it could not distinguished traumatic or pathologic changes exist of putrefaction findings.

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Table-2. Autopsy findings of 9 corpses found in the second house.

Case			
No	Findings of external examination	Findings of internal examination	
11	<ul> <li>Parchment plates (echymosis was not seen on the sections of theirs) on the whole of the face, on the whole of the anterior side of the lower lip, on the right wrist, on the right costo-lumbar region and on the back side of the right shoulder.</li> <li>Ligature marks (there was not ligature) around the neck, (beginning at the level of the larynx and extending towards the both side of the neck)</li> </ul>	<ul> <li>Wide petechial bleedings under the scalp, on temporal muscle groups, on lungs surfaces and on the inner side of the bladder. Under the scalp, two ecchymosis (2x2 cm) on the left in the frontal region and (7x10 cm) on the right of the occipital region. Hematoms under the chest skin (diameters ranged from 1 to 5 cm, 1 cm in thickness). Ecchymosis (1 cm in diameter) on the inner side of the lower lip. Widespread ecchymosis on the epidermis and soft tissues of the anterior side of the neck, fracture with an ecchymosis on hyoid bone,</li> <li>Putrefaction findings**</li> </ul>	
12	Two ecchymosis on the right axillar region (8x8 cm), on the back-inner side of the right arm (5x5 cm), four echymosis lying parallel to each other from the upper part of the left scapula region toward the lower part of the right scapula region (0.5 x 20 cm), two ecchymosis with lying parallel to each other from the lower end of the left scapula region towards to the right lumbar region (1x 15 cm), three ecchymosis on the left scapula region (3 x 4 cm) and on forehead (2 x 10 cm and 2 x 3 cm), a number of superficial lacerations with ecchymosis on the dorsal side of the right foot.  Ligature marks (there was not ligature) on the neck (perpendicular to the body axis and wrapped all around the neck)	<ul> <li>Scarce petechial bleedings on the lung surfaces,</li> <li>Three ecchymosis on the soft tissues around the thyroid cartilage under the ligature marks.</li> <li>Widespread hematomas in gluteal muscles</li> <li>Putrefaction findings**</li> </ul>	
13	<ul> <li>Deformation and losses of soft tissues on both arms, left leg and perineal region*,</li> <li>Separation of the right forearm from the elbow and fracture of ulna, separation of the fractured left arm from the body, fracture of the left femur and dislocation at the lower end of the left tibia and fracture on the lower part of the fibula*.</li> </ul>	<ul> <li>Ecchymosis on the right fronto-parietal region (5x15 cm), in the pectoralis muscle (2x3 cm), in musculus thyro-hyoideum (2x2 cm) and on the left horn of hyoid bone (0.8 x 0.8 cm)</li> <li>Widespread sub-pleural petechial bleedings</li> <li>Fracture without ecchymosis on the right horn of hyoid bone,</li> <li>Putrefaction findings**</li> </ul>	
14	<ul> <li>Deformation and losses of soft tissues on both arms, separation of the right arm and fractured left arm from the body*</li> </ul>	- Putrefaction findings**	
15	<ul> <li>Partial disarticulation of the joints of the upper extremity, widespread tissue defects on forearms, the left gluteal and the right lumbar regions*.</li> </ul>	- Putrefaction findings**	
16	<ul> <li>Totally losses of soft tissues on the head, neck, both hands, both feet, the right side of the chest and pelvis (bones appeared on these regions), totally losses of the vertebras and soft tissues on the neck region, disarticulation on the mandibler joints and partly losses of the mandible*</li> </ul>	<ul> <li>Totally losses thyroid and hyoid cartilages.</li> <li>Putrefaction findings**</li> </ul>	
17	- Widespread tissue and bones losses on the face and forehead*	<ul> <li>A fracture on the skull base in the left anterior fossa, around which ecchymosis was indistinguishable, disarticulation of the 6<sup>th</sup> cervical vertebra around which ecchymosis was indistinguishable, serial fractures on all of the coats on the left of thorax around which ecchymosis was indistinguishable.</li> <li>Putrefaction findings**</li> </ul>	
18	<ul> <li>Deformation and losses of soft tissues on left leg, disarticulation of right tibia and fibula *</li> <li>Tissue defects on the back of the left leg (4 x 5 cm) and on the right of the sacrum (4x5 cm), fractures of left fibula*</li> </ul>	- Putrefaction findings**	
19	<ul> <li>Totally separation of right upper extremity from body*</li> <li>On the separated right upper extremity, double fractures of radius and ulna and widespread soft tissues tears*</li> </ul>	<ul> <li>A bone defect (6 x 6 cm) including the foramen magnum on the right posterior cranial fossa, bone losses on the corpus of the first and the second cervical vertebras and mentum of the mandible.</li> <li>Putrefaction findings**</li> </ul>	

(\*) In those cases, it could not distinguished whether echymosis exist under/around defined lesions. (\*\*) In those cases, it could not distinguished traumatic or pathologic changes exist of putrefaction findings.