



Original communication

Dismemberment and disarticulation: A forensic anthropological approach



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ABSTRACT

The dismemberment of a corpse is fairly rare in forensic medicine. It is usually performed with different types of sharp tools and used as a method of concealing the body and thus erasing proof of murder. In this context, the disarticulation of body parts is an even rarer event. The authors present the analysis of six dismemberment cases (well-preserved corpses or skeletonized remains with clear signs of dismemberment), arising from different contexts and in which different types of sharp tools were used. Two cases in particular showed peculiar features where separation of the forearms and limbs from the rest of the body was performed not by cutting through bones but through a meticulous disarticulation. The importance of a thorough anthropological investigation is thus highlighted, since it provides crucial information on the manner of dismemberment/disarticulation, the types of tools used and the general context in which the crime was perpetrated.

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1. Introduction

The dismemberment of a corpse is an event which usually causes sensation and curiosity. In fact, it is frequently considered as a more brutal and inhuman act than the homicide itself. The term “dismemberment” refers to a voluntary criminal act, thus excluding accidental events. In these cases, the identification of the victim and the reconstruction of the cause and manner of death can be challenging.^{1,2}

In literature, a general classification of various types of dismemberment has been developed and is nowadays widely accepted with a division in four categories based mainly on the aims and reasons of the crime^{3–6,7}: the one with the highest number of cases is the so-called “defensive mutilation”, concerning all the cases in which the perpetrator (or the perpetrators) hacks the body in many pieces with the aim of more easily transporting and concealing. Instead, when the dismemberment is the result of

impulsive and aggressive actions against the corpse of the victim (in order to remove parts of the body as a demonstrative act) the category is named “offensive mutilation”. “Aggressive mutilation” is represented by dismemberment as a way to kill, that is when the severing of body parts is the direct cause of death (frequently decapitation).^{8,9} The last category is represented by “necromaniac mutilation”, i.e. when the perpetrator collects parts of a buried corpse for his own sexual pleasure.

Another classification was created by Salfati¹⁰ who distinguished among “expressive” and “instrumental” mutilations; in the former, the victim represents a symbolic target, towards which the communication or satisfaction of the psychological needs of the perpetrator are directed; in the second case the main aim of the perpetrator is to achieve some advantage (for example, economic benefits).

For what concerns the relationship between dismemberment and psychiatric disease, very few studies are available at the moment. Rais et al., for example,³ described a link between aggressive and defensive mutilations and alcohol/drug addiction, usually with previous psychiatric and criminal records, whereas in case of sexual crimes, previous criminal records are frequently present along with anxiety, schizophrenia or drug-addiction. To our

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knowledge, more precise indications useful for the identification of the offender have never been assessed.

In most cases dismemberment is performed with sharp objects (handsaws, chainsaws or different types of knives).^{1,3,10,11} These tools can leave specific signs on the tissues and especially on bone. In fact, the analysis of cut and saw marks on the bone can enable the identification of the areas of severing as well as the tools used.^{12–15}

However, still little literature exists on dismemberment and articles frequently refer to case reports (Table 1). The only systematic studies on this topic have been performed by Symes et al. whose observations are at present the main sources of information for forensic anthropology in the field of tool mark analysis on bone.^{16–21} Moreover, a particular issue has never been analyzed: the disarticulation of some body parts as an alternative method of dismemberment, and a possible indication of criminal context.

The study presents six different cases of dismemberment which occurred in Milan, Italy, between 1999 and 2011.

2. Case reports

2.1. Case 1

In 2006 a dismembered body was found in four black plastic bags in the cellar of a building in the city centre of Milan; the victim was identified as a 77-year old female owner of the cellar. The son (a 50-year old male), who had difficult relationships with his mother and who had previously been imprisoned for other crimes, was charged with homicide.

At autopsy, the four plastic bags were opened: in the first the head was present, severed from the rest of the body at the fourth cervical vertebra which showed a complete transverse cut. The thorax, in the second bag, was separated from the abdomen by a transverse cut through the first lumbar vertebra. Abdominal organs and thighs (severed at the femoral condyles) were placed in the third bag. The fourth bag contained the upper limbs (the left one severed at the humeral diaphysis, the right one at the middle of the humeral head), and the remaining part of the lower limbs (Fig. 1). Several fractures were detected on the cranial vault and the cause of death was thus identified as skull and brain injuries due to multiple blunt force traumas. Investigating authorities searched for the type of tool used for dismemberment since a knife with a saw-type edge was missing from the collection of knives of the man's girlfriend (she too suspected). Soft tissues, in an advanced state of decomposition, provided no additional information. Afterwards, the man confessed the murder of his mother by hitting her on the head with an iron and then dismembering her body with a saw.

The areas of dismemberment of the neck and long bones (cervical vertebra, left humeral head, right humeral diaphysis (Fig. 1a), femoral distal diaphysis) showed fairly clean transverse cuts. However, one lesion on the left thigh was interesting: a cut

mark in the major trochanter was detected (Fig. 1b) with the typical pattern of a false start: the perpetrator probably stopped when he hit the metallic prosthetic device in her femur after she had fractured it some years before. A silicone cast of the lesion was performed in order to reproduce the morphologic characteristics of the tool used; the cast showed characteristics which were inconsistent (mainly because of metric differences) with the knife found in the woman's apartment. The final cut to both legs was then performed on the distal diaphysis, just above the condyles (Fig. 1c). Hence, the use of a handsaw was demonstrated, and confirmed by the witnesses of the man: it created a clear severing of the head at the fourth cervical vertebra, without false starts. No false starts were found on the right humeral diaphysis, on the left humeral head and on the fourth lumbar vertebra. Clear saw marks with presence of false starts were indeed visible on the left femoral diaphysis (where the cut stopped on the prosthesis) and on the distal part of both femoral diaphysis (where the lower limbs were severed from the rest of the body). Murder and dismemberment were thus performed by a family member of the victim, using quickly available tools, probably lacking detailed anatomical knowledge.

2.2. Case 2

In 1999 a human torso and upper limbs enveloped in a shower curtain were found in an abandoned irrigation ditch: the head and the lower limbs were missing and every further attempt at recovering them was unsuccessful. At autopsy, a clear section (probably made by a sharp weapon with a linear or a serrated edge) through the hyoid bone and 3rd cervical vertebra was detected, but the most interesting features were on the lower part of the corpse: in fact, the lower limbs were totally disarticulated (Fig. 2) and the acetabula or surrounding parts of the pelvic girdle were totally lacking of any sign of cut marks, even after a stereomicroscopic survey. A clear cut mark was detected on the third cervical vertebra and on the hyoid bone, where the head was probably detached from the rest of the body, but no other cut marks were detected on the other dismembered parts. In this case several features suggested that the act could have been performed by one or more perpetrators, probably with the aim of better hiding the body. However, the technique of dismemberment was peculiar, since it was not performed in a "typical" manner (severing bones directly with sharp instruments) but by disarticulating the limbs, as proven by the total absence of cut marks on the cortical bone of the pelvic girdle and especially on the acetabula.

2.3. Case 3

In 2006, in a woodland near the city of Milan, the dismembered body of a male was discovered in four black plastic bags. The

Table 1

Available articles concerning case reports about dismemberment or mutilation.

Authors	Year	Number of cases	Nation	Type of dismemberment/mutilation
Rajs J et al.	1998	22	Sweden	various
Reuhl J et al.	1999	1	Germany	mutilation with chain saw
Madea B et al.	2000	1	Germany	dismemberment with chain saw
Türk EE et al.	2004	3	Germany	decapitation with cutting tools
Konopka T et al.	2006	1	Poland	division of the body in many fragments (850) with various tools and charring
Di Nunno N et al.	2006	3	Italy	2 cases of dismemberment and 1 case of decapitation with cutting tools
Konopka T et al.	2007	23	Poland	various
Dogan KH et al.	2010	1	Turkey	dismemberment and decapitation with cutting tools
Delabarre T et al.	2010	1	Ecuador	dismemberment with cutting tools

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