

A Historical and Osteological Examination of Torture
Senior Honor's Thesis
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Anthropology
Spring 2017

Introduction

The term torture tends to conjure complex and convoluted images of intricate medieval instruments constructed to inflict pain. However, the most common torture tactics involve no more than brute force; most injuries resulting from “punches, kicks, and beatings” (Kimmerle 2008, 201). The diagnosis of torture is typically based on the “assessment, treatment, and rehabilitation of living victims, and in some cases on the postmortem examination of alleged victims” (Kimmerle 2008, 202). However, in the case of the archaeological record, where much is left to interpretation, this is often a difficult feat to accomplish. “Medical proof of torture is usually difficult to obtain, especially with the torture methods, which keep signs of injury to a minimum or none” (Ozkalipci et al. 2013, 142). How then can biological/forensic anthropologists distinguish the presence of torture on historical human remains?

Though a horrific topic to investigate, biological/forensic anthropologists owe it to the deceased to investigate every detail of concerning their death. However, such research is costly and time consuming. Because of financial and timely restrictions, usually only elementary analysis is done on new cases. Such preliminary analysis usually includes: a skeletal inventory, the victim’s biological sex, estimated age range, and race (geographical affinity). Secondary topics of interest are: the victim’s cause of death, present pathologies, taphonomic processes, and analysis of any present trauma. However, because evidence of torture can be slightly more difficult to ascertain, it is often overlooked; especially when taphonomic processes mask the presence of the associated skeletal markers.

If it is so difficult, why then should forensic anthropologists spend time looking for evidence of torture? The answer to that question is quite simple: the victims and their families. Not only do the families of these victims want closure, but they also want justice. Families of torture

victims “seek to have the story of what their loved ones suffered told with scientific precision, so that the world will know both the crimes of perpetrators and the agony of victims and survivors” (Rosenblatt 2015, 83). It is through the osteological interpretation of human remains, and the assistance of historical context and documentation, that allows forensic anthropologists to give torture victims their lives back; to make them more than just remains, to make them human again.

Torture Defined

In 1987, an official, ‘legal,’ definition of torture was published. Article 27(1) of the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment defined torture as “any act by which severe pain or suffering, whether physical or mental, is intentionally inflicted on a person for such purposes as obtaining from him or a third person information or a confession” (Kimmerle 2008, 202).

Though descriptive, this definition is lacking in many ways. The primary problem is that this definition is by no means cross-cultural. This definition rests on modern, Western, standards of morality and law (Einolf 2007). What is considered severe suffering by the governing bodies of 21st century America, may not be the same for those residing on the other side of the globe. Therefore, this broad definition is not useful in cross-cultural, historical studies of torture. Another concern with this legal definition is that “it makes the motive of the person inflicting the “severe pain and suffering” essential to the definition of torture” (Einolf 2007). This is problematic because in many instances, especially in historical cases, “motive may be impossible to determine” (Einolf 2007).

History

Those who grew up on “a diet of American movies circa 1930-1960” often consider torture as a means of “forcible extraction of confessions from the bad guys or of information from the

good guys” (Wisnewski 2010). This perception of torture is deeply rooted in the ideal that was extremely popular amongst the ancient Greeks; that torture was an efficient way to ascertain the truth (Wisnewski 2010). Torture was described by Demosthenes “as the most reliable method of obtaining a confession” (Forrest 1996, 21). In the Greek legal system, the torture of slaves “figured as a guarantor of truth, as a process of truth making” (duBois 1991, 47). Similarly, “judicial torture has been recorded in ancient Chinese, Egyptian and Assyrian texts” (Forrest 1996, 21). Though a bit asinine; for the victims are desperate for freedom so they would tell the courts whatever they wanted to hear, this perception of torture hasn’t changed much over the centuries.

In addition to the ancient Greeks, there are also deep connections between the use of torture and the law courts of Medieval Europe (Wisnewski 2010). In the Middle Ages, disciplinary torture was often used in a circumscribed way, that is, “the amount of torture previously prescribed as punishment was administered, rather than limitless amounts of torture” (Steinhoff 2013, 147). For example, a man could have an extremity cut off for stealing an apple, then later a different man could receive the same sentence for the same crime; the earliest form of judicial precedent. Using torture as punishment for criminal acts therefore broadened the definition of the word. Torture was no longer “a process of truth making,” (duBois 1991, 47) but rather a scare tactic to ensure no civilian would make the same mistake twice.

It was not until the Holocaust that the United Nations was developed and an ethical code was formulated to limit, or completely obliterate, the utilization of torture as a means of interrogation method. Though, “torture had been outlawed in most European countries by the end of the eighteenth century” (Forrest 1996, 32) that still didn’t stop it from still occurring. In fact, despite its formal abolition in the 19th century, the 20th century has brought about a new wave of torture practices. “During the past century... governments have used torture less often against their

citizens, but more often against people who are not full members of a society, such as slaves, foreigners, prisoners of war, and members of racial, ethnic, and religious outsider groups” (Einolf 2007). It is contemplated that this torture revamp is due to two general 20th-century historical trends.

The first trend is an increase in both the number and severity of wars. This increase has led to a parallel “increase of torture against enemy guerrillas and partisans, prisoners of war, and conquered civilian populations” (Einolf 2007). The second trend is the “changes in the nature of sovereignty have caused an expansion in the definition of acts constituting treason” (Einolf 2007). Whether these are the leading factors, or the only two factors, for the increasing prevalence of torture is unknown, but nonetheless they are contributors to the dilemma.

Torture may seem like something someone living in the modern world should never worry about, but that is far from the truth. “Torture is a global reality employed as a political tool in more than 100 countries to systematically break the spirit and destroy the very identity and personality of its victims” (Brogdon and coworkers 2003, 105). The United States is not excluded from this list. For example, “in 2004, the world was shocked by the sight of photos of torture conducted by U.S. soldiers at the Abu Ghraib prison in Iraq” (Einolf 2007). The reality of the situation is that as humans have evolved, so has the violence inside them.

Types of Torture: Overview

Torture methods used in contemporary times resemble those used in earlier historical periods, with some exceptions. For example, as seen in Fig. 1, a man is being forcibly stretched out on what is referred to as ‘the rack.’ This mechanism was designed to dislocate every joint in the victim’s body. In fact, in some instances the victim’s limbs would be completely torn off due

to the extreme amount of stretching. The rack is believed to be the most painful form of medieval torture but, for obvious legal reasons, is no longer used today.



Figure 1. An individual being stretched on what is referred to as “the rack.”

Much like the Middle Ages, in today’s society, common forms of torture are, but not limited to, “beatings, rape and sexual assault, the infliction of burns, painful stretching of the limbs, crushing of the body or parts of the body, near-drowning, and being forced to maintain an uncomfortable position for a painfully long period of time” (Forrest 1996; 108). In addition to the torture tactics listed above, excessively cruel conditions of imprisonment can also be seen as torture. Although, what is considered “excessive” may vary from place to place (Einolf 2007).

The most significant innovation in torture methods is torture via electric shock. Before the 20th century, a widely used “current technique” was not available (Einolf 2007). Other modern forms of torture that have proved to be extremely popular include sleep deprivation and sexual humiliation. In other words, abusers have begun to favor techniques that leave even less of a physical trace on the victim; a trend that can make torture interpretation via the skeleton much

more problematic in the future. These purely psychological forms of torture can be explained in part by the “rise of human rights monitoring” (Einolf 2007).

Another newfound torture method is the fracturing “of arms and legs due to gunshot wounds,” and the use of a gun as a “blunt object to beat victims with” (Kimmerle 2008). When it comes to long bone fractures created by gunshot wounds, the healing process is often difficult; “healing of these fractures is often difficult and sequels such as periostitis and osteomyelitis are frequent” (Kimmerle 2008). Considering the kinds of environments these victims are being held in, the bone infection would spread quickly leaving them in even more of a desperate situation.

Surprisingly there are some striking similarities in the preferred torture methods utilized across societies. These similarities are likely explained by the “limited range of ways one can inflict pain on the body without causing life-threatening damage” (Einolf 2007). For example, whipping with electric cords occurs frequently in Iran and Syria (Moisander 2003). Rape is most often reported among the Ugandans (Moisander 2003). Genital torture is frequently alleged by victims from Bangladesh and Turkey (Moisander 2003). Suspension is common in all countries except for Uganda (Moisander 2003). Finally, sharp injuries inflicted with knives and bayonets were often seen among the Bangladeshi and Ugandans (Moisander 2003).

Contrarily, some torture methods have found to be almost exclusive to a certain country. For example, “water treatment,” and “burning injuries due to cigarettes” are commonly seen only in victims from Bangladesh (Moisander 2003). Similarly, the “tyre” is typically seen in Syria, and “telephono” and “submarino” in Peru (Moisander 2003). Each locale may specialize in a specific brand of torture, but they are all similar in the sense that they are meant to cause extreme pain for the victim without killing them.

Types of Torture: ITF or CTS

Incomplete tooth fracture (ITF), or cracked tooth syndrome (CTS), refers to a “fracture plane of unknown depth and direction passing through tooth structure that, if not already involving, may progress to communicate with the pulp and/or periodontal ligament. These types of dental fractures are caused while the teeth are biting into a hard object. Typically, an object is placed in the mouth and the lower jaw is thrust upward by a blow (Kimmerle 2008, 215). This particular instance of ITF comes from an individual from Kosovo.

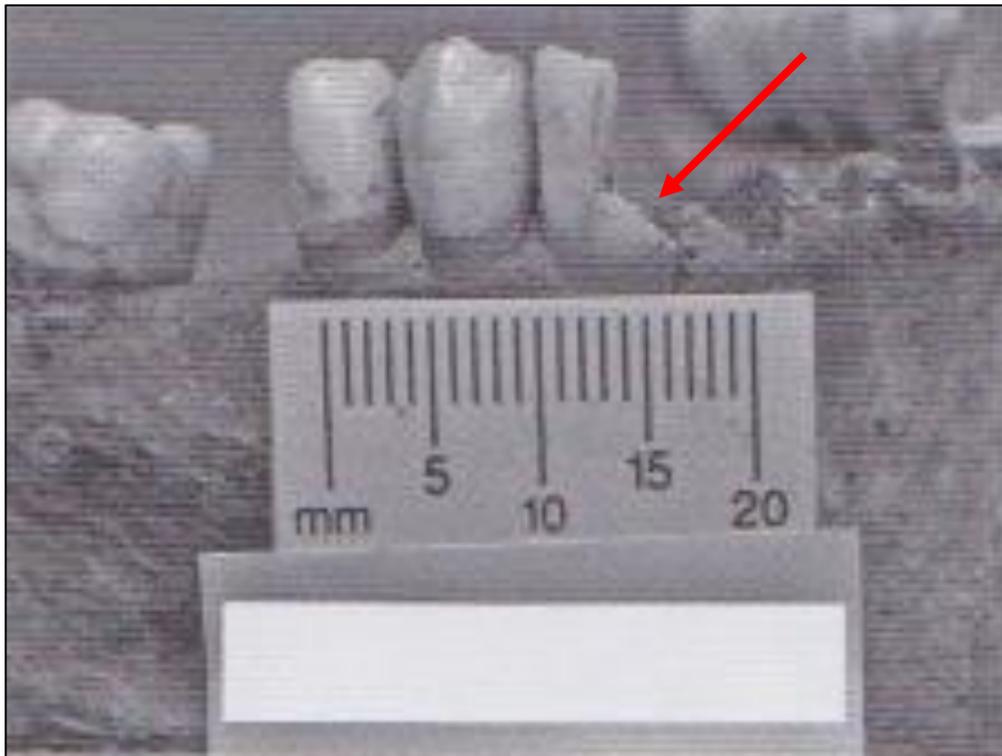


Figure 2. Longitudinal fracture lines of the anterior mandibular teeth.

As seen in Fig.2, ITF/CTS can cause extreme fracturing to the teeth, and once the enamel is cracked, then the tooth no longer has any kind of protection. For example, the extremity of the crack in Fig. 2 would result in the pulp chamber (which houses all the tooth’s nerves) being left exposed. This exposure would no doubt leave the victim in an immense amount of pain. In addition, the victim would also be at a higher risk for contracting all kinds of infection, especially if the victims were forced to ingest any kind of substance afterwards.

Types of Torture: Falaka

Being “one of the oldest methods, traditional throughout the Middle East, even for punishment for children,” (Forrest 1996, 110) falaka (also referred to as falanga and sometimes called bastinado, is a form of torture, “where the soles of the feet are beaten with truncheons, sticks or whips, usually with the ankles held or tied up in the air” (Forrest 1996, 110). As seen in Fig. 3, falaka is not only a form of physical torture, but also a psychological one. Not only is this man being beaten, but a crowd has gathered to watch his suffering.



Figure 3. A victim being tortured by having the soles of his feet beaten.

During falaka, “the beating causes edema and hemorrhages in the muscles and the foot soles” (Altun 2003, 366). This can be quite damaging because when the “firmly bound aponeurosis of the foot soles, muscles, nerves, and bones are exposed to high pressure and reduced blood flow” the surrounding bone and tissue ultimately deteriorates. If blood flow becomes too impaired, then the small bones, the metatarsals and the proximal phalanges, suffer and are partially necrotized” (Altun 2003, 366).

Though “falanga has mainly been used in the Middle East, it has been reported from Western Europe to East Asia” (Kimmerle 2008). In a case study conducted on live victims who had been victims of falaka, it was “reported that a thicker central portion of the plantar aponeurosis is observed in the victims who had been exposed to a falanga torture in the past when compared with controls” (Altun 2003, 366). Within the same case study, it was discovered “that if the duration of exposure to torture period had been longer (8 days and more) the detectable bone lesion on scintigraphy rate increased significantly” (Ozkalipci et al. 2013, 142).

Because of the necrotic tissue formation caused by falaka, skeletal analysis years after an initial incident is possible. Scintigraphy, which “is a sensitive method of detection of primary and metastatic skeletal neoplasms, metabolic bone disease and various joint abnormalities” (Ozkalipci et al. 2013, 142), can highlight the areas which have undergone extensive trauma. In the case of falaka, the areas that would be highlighted on a scintigraphy scan would primarily be the heels and the ankles. The heel of the foot will highlight where the victim took most of the beating, and the ankles would highlight the ligature marks from where the victim’s feet were suspended.

Types of Torture: Sexual Abuse

While some forms of torture leave evidence on the skeleton for later interpretation, most forms do not. Sexual abuse as a torture tactic has been around for centuries; such instances are especially prevalent in times of war; “widely condemned in peacetime, sexual violence becomes rampant in warfare” (Vikman 2005). However, rape and sexual assault seem to have been “less common during historical periods and in cultures where torture was legal and formally regulated,” (duBois 1991, 152) although it is possible that sexual torture and rape were widely practiced but not recorded in historical documents.

While this form of torture usually leaves evidence in the form of soft tissue disturbance, there are still instances where osteological examination can reveal a horrific hidden truth. A perfect example of where osteological examination can determine sexual abuse comes from a 1996 case study. This study dealt with a skeletal crime scene in a rural community. The remains were thought to be those of a 34-year-old white female who had disappeared in May 1994 from her family home (Passalacqua 2015, 118).

Examination of the victim revealed that in addition to the cranial blunt force trauma she had suffered, she also had an elongated puncture to the anterior surface on the right side just below and slightly medial to the first sacral foramen; the depth of penetration extends through the cortex. Two fragments of bone (one on the lateral inferior margin of the defect and the other on the medial superior margin of the defect) are elevated, which may represent a slight twisting action of the object responsible for the defect. After rearticulating the bones of the pelvis to examine the

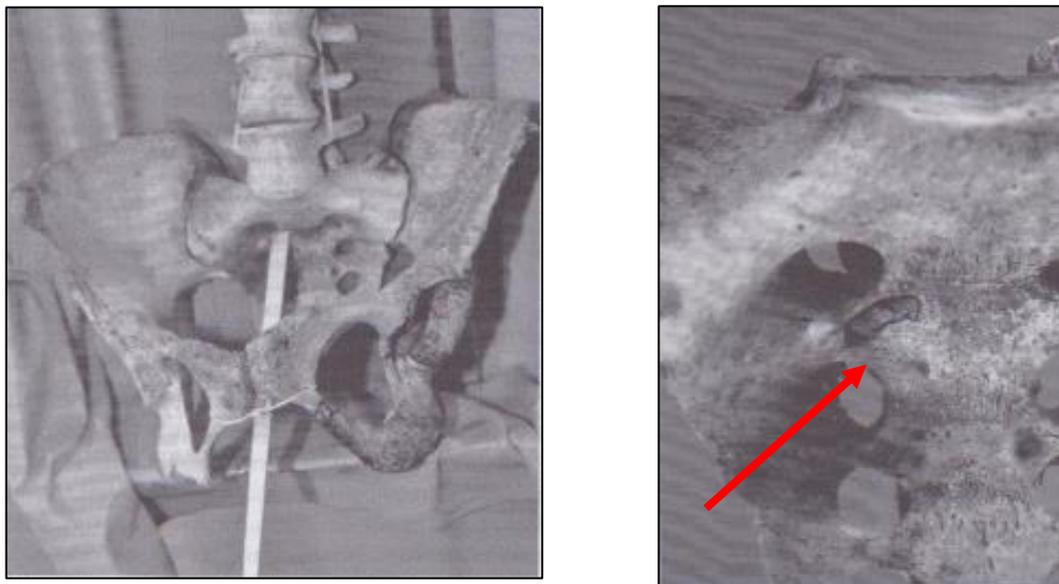


Figure 3. The image on the left depicts the approximate angle and size of the object that was used to create the sacral deformity illustrated on the right.

orientation of the tool that produced the defect, the evidence supported the conclusion that a tool

consistent with a tire iron was inserted vaginally to produce the penetrating trauma to the sacrum (Passalacqua 2015, 125).

Though this case proved triumphant determining sexual abuse from skeletal analysis, this is not typically the case. There is often no skeletal evidence associated with sexual abuse cases. While analysis of the skeleton can say a lot, unfortunately certain parts of past people's lives will forever remain unknown.

Misconceptions about Torture

While movies often portray amputation as a main torture tactic, "amputation as part of torture seems to be extremely rare" (Kimmerle 2008). Though rare it is not impossible to see amputations as part of torture; for example, punitive amputations have frequently been recorded in several Islamic countries (Kimmerle 2008). Most of these cases have been amputations of the right hand, but cross-limb amputations (right hand and left foot) have also been reported in modern times.

Likewise, sharp force trauma is not usually seen with torture victims, even though sharp objects such as knives may be used to inflict pain on the victims, evidence of the use of long swords on the victim is not usually present (Kimmerle 2008). Not to say that sharp objects are never the weapon of choice, but as far as being able to interpret their use in the skeletal record, it can be hard to distinguish the sharp force trauma from the blunt force trauma. For example, both axes and heavy swords cause injuries that have markers of both sharp and blunt force trauma (Kimmerle 2008), however the blunt force component of the injuries is typically dominant and overtakes the evidence of sharp force trauma.

Another common misconception is that the longer a victim is held captive, the more skeletal evidence there will be. This is not always the case. Though it has been found that "skeletal

evidence consistent with torture or ill-treatment is likely to be more common among victims of enforced disappearances that are followed by extrajudicial executions” (Kimmerle 2008). This could very well be due to the fact that victims in these situations are often beaten, perhaps over a period of time, and therefore fractures at different stages of healing will also be evident (Kimmerle 2008).

Skeletal Markers of Torture

When looking for skeletal indicators of torture, often “blunt force trauma (BFT) to the face, ribs, sternum, and spine may be good indicators of torture or ill-treatment” (Kimmerle 2008). Analysis of the rib cage is especially important in the detection of torture. The rib cage, because of its size and accessibility to an attacker, exhibits fracture patterns that can be differentiated from accidental blunt force trauma. The lack of soft tissue surrounding the ribs makes the “reconstruction of traumatic thoracic events and the understanding of bone biomechanics indispensable” (Kimmerle 2008).

Studies of reports from torture victims have revealed that about “10% report fractures, most frequently, of the ribs, followed by the legs and pelvis, hands and wrists, columnar spine, jaw, skull, and arms” (Kimmerle 2008). However, it should be noted that while this is the typical distribution of injuries sustained during torture, this is by no means the only places that skeletal trauma caused by torture can occur. Interpretation of these most frequent fractures could provide insight into the type of torture that the victim underwent. For example, a mixture of healed and fresh breaks to the ribs could indicate that the victim was kicked or punched vigorously on more than one occasion. In addition, fractures on the sternum can be an indication of a crushing force being applied to a victim to hinder their breathing. Likewise, spiral fractures on the wrist could be indications of the victim being tied up with their hands behind their back.

Other skeletal indicators of continuous torture are “thickening of the bones (callus formation), positional abnormalities due to dislocated healing or insufficient fusion of fracture ends and pseudo-joint formation” (Kimmerle 2008). However, though these are indicators of long term beatings, they could also be present on the skeleton because a bone wasn’t set properly after an accidental fall. Another indicator of possible torture is the “after-effects of osteomyelitis secondary to either lacerations or fractures” (Kimmerle 2008). In addition, “fracture sequels to the hyoid bone are strongly indicative of manual or ligature strangulation” (Kimmerle 2008).

Some of the more overlooked, or ‘less exciting,’ indicators of torture are skeletal markers of poor health. These can include stunted bone growth, rickets, Harris Lines, etc. (Buikstra 1994). Though markers such as Harris Lines can prove to be useful, they cannot be solely relied on to indicate torture. They can however prove to be useful in conjunction with other skeletal evidence to estimate things like how long a victim was held captive for. In addition to Harris Lines, dental pathologies could also prove to be a good indicator of the overall health (White 2005) of the victim while they were being held captive. The presence of a mandibular abscess and/or dental caries can reflect, but not prove, the use of ‘moderate physical pressure’ forms of torture.

One thing that is typically not associated with torture victims however is defensive wounds (Kimmerle 2008). This is due to the fact that whilst the torture is taking place, the victims are restrained in one matter or another. Whether the victims are bound by the hands, feet, or both, they will not exhibit the typical fracture patterns that are often associated with defending oneself from an attacker; defensive wounds are typically in the form of forearm fractures (Burns 2013). However, unique wounds that they may exhibit are arthritis in their necks, knees, and shoulders from being restrained in an unnatural manner for so long (Kimmerle 2008).

Torture Patterns

Because the primary mechanism of injury in cases of torture is blunt force trauma, specific skeletal patterns can be linked with torture (Kimmerle 2008). Some of the fracture patterns that victims of torture possess, highly resemble “the distribution of injuries caused by interpersonal violence across cultures” (Kimmerle 2008). This is likely because in both instances, the victims are being beaten in an intense and uncontrolled way.

Characteristics of Blunt Force Trauma from Documented Torture Cases

Variable	Anatomical Structures Affected
Location of Injuries	Chest/Thorax
Skeletal Regions Most Affected	Sternum, ribs, lumbar Spine
Type of Injury	Skeletal fractures consistent with blunt force mechanisms
Location of Injury Per Region	
<i>Ribs</i>	Fractures tend to be adjacent to costochondral joint, axillary or paravertebral line; the latter especially in ribs 10-12
<i>Sternum</i>	Single or multiple fractures, displaced or un-displaced fracture of the sternal body
<i>Lumbar Vertebrae</i>	Complete or incomplete fractures, typically a unilateral fracture of the transverse process
Number of Fractures Per Region	
<i>Ribs</i>	One to three fractures per rib; multiple fractures generally associated to multiple blows
<i>Sternum</i>	One to two fractures; one fracture likely to occur above the point of impact; two fractures generally result from a broader impact

(Kimmerle 2008, 231)

Recorded Incidents of Torture: Argentina

From 1976-1983 approximately somewhere between ten and thirty thousand of Argentina's citizens 'disappeared.' The majority of people that disappeared were: "leftist militants, university students and professors, journalists, psychiatrists, Jews, social workers, unionists, rural activists" (Rosenblatt 2015, 84). This demographic is significant because it draws a strong correlation between the victims and the abusers; "those who did not fit into the ruling junta's semifascist conception of a purer, "reorganized," Argentina" were disposed of (Rosenblatt 2015, 84). This correlation makes it clear that these 'disappearances' were by no means accidental.

The treatment of these victims, like all torture victims, was unjust and cruel; "they were raped, drugged, and in most cases murdered" (Rosenblatt 2015, 84). These innocent people were taken from their homes and workplaces and then tortured and "imprisoned in clandestine camps that had been set up in factories and beneath shopping malls" (Rosenblatt 2015, 84). Sadly, this is not the only mass genocide where victims were tortured before being executed.

Recorded Incidents of Torture: Kosovo/Kosova

Two, more recent, documented cases of torture occurred in Kosovo/Kosova. Multiple sets of remains were excavated and all showed evidence of torture. The conflict in Kosovo from 1998-1999 between the Kosovo Liberation Army and Serbian security and paramilitary forces resulted in the disappearance of 5200 people and the deaths of approximately 5000 people. A few years later (2001), after a large-scale investigation had been carried out to gather evidence against Serbian political leaders, nine sets of remains were excavated, all of which showed evidence of torture (Kimmerle 2008). In most cases, fractures to the ribs, sternum, and tibia showed evidence of reactive bone formation and areas of resorption around, or adjacent to, the fractured edges, indicating survival for several days following the injuries.

Skeletal trauma provided physical evidence that corroborated witness testimony the detainees were routinely beaten, denied medical treatment, and systematically tortured. The documented skeletal trauma for these individuals was used as evidence of torture and ill-treatment in *The Prosecutor v. Limaj et al.* (IT-03-66), setting a precedent for diagnosing torture from skeletal remains and presenting such evidence in trial (Kimmerle 2008).

Recorded Incidents of Torture: Peru

In Peru from 1980-2000 armed conflicts between the national security forces and both Sendero Luminoso and the Movimiento Revolucionario Tupac Armaru, resulted in mass death. More than 65,000 Peruvians lost their lives, and not always in 'humane' ways. However, once the conflict subsided, excavation of three cases of eight individuals all throughout Peru assisted in documenting torture that took place during the conflict (Kimmerle 2008).

All three incidents involved unarmed civilians and the security forces. Skeletal evidence demonstrated that all eight cases shared specific traumatic injuries to the thoracic cage or spine; linear fractures on the ribs and the sternum were also present. The witnesses stated that inhumane and cruel treatment was inflicted; the victims were stomped, kicked, and hit before being killed (Kimmerle 2008). By combining both the witnesses' statements and the skeletal analysis, intentional maltreatment could be concluded.

Recorded Incidents of Torture: Israel

In Israel 'moderate physical pressure' is used as the primary form of torture. This includes: isolation, deprivation of sleep, toilet facilities and food, hooding, violent shaking, and prolonged confinement in tiny cells (Forrest 1996, 114). It is torture such as this that makes identifying torture victims extremely difficult. Unless a victim is held captive under these conditions for a significant period, skeletal evidence may not even exist. There is always the possibility of the development

of Harris Lines from a lack of proper nutrition, or some evidence of slight bone fracturing if the victim was shaken hard enough (White 2005), but again the victim would have to be captive for some time before evidence such as this were to be evident.

For example, typically, in Bangladesh, Peru, and Turkey, the periods under arrest are short: from a few hours to 3 days, however in Iran, Uganda, and Syria, the time in custody varies from several months to several years (Moisander 2003). Even if these victims were to undergo daily beatings, unless the skin has been broken and there are characteristic scars across the back or bony points, it is often hard to distinguish that torture has taken place; “often nothing more remains than could be accounted for by normal accidental injury” (Forrest 1996, 115).

Interpretation Difficulties

When analyzing a skeleton, especially one that has been a victim of torture, it is crucial to remember that “the lesions observed are only a fraction of injuries occurring in the body and that there are many ways to cause harm without breaking bones” (Kimmerle 2008). However, the intention of the abuser may be to cause harm by breaking bones; in this case, there will be many breaks to analyze.

If the specimen being analyzed does in fact have numerous fractures throughout their skeleton, then caution must be taken. There is no guarantee that all the breaks documented were caused by torturous acts. “The distribution of bone fractures must be interpreted in light of the expected patterns of injury caused by known agents, requiring a differential diagnosis based on injury patterns from beatings versus accidents or falls” (Kimmerle 2008). If other factors, such as accidents, are not taken into account then the results of the skeletal analysis will suggest false circumstances.

Discerning torture via skeletal analysis is also faced with the difficulty of differentiating wounds into the classifications of postmortem, antemortem, and perimortem (Buikstra 1994). Usually this task would not present too much difficulty, but in the case of torture this is not the case. Because the prime function of torture is to elicit as much pain as humanly possible without killing an individual, the line between perimortem and antemortem often becomes blurry. It is often unclear if the trauma inflicted during torture was the cause of death or occurred close to death. This can make the interpretation skeletal torture even more difficult to understand.

Another common difficulty with skeletal interpretation is differentiating between scavenger markers and markers of actual forensic significance; “suspicious osseous fractures and defects should be scrutinized with skepticism, especially when the remains present excessive evidence of scavenger activity” (Passalacqua 2015). If one analyzes a skeleton expecting to find something, than their judgement will be clouded and their data will be skewed. In other words, “the presumption of innocence must not be wrongfully skewed by faulty interpretation of questionable evidence” (Passalacqua 2015). For example, the sexual abuse case previously mentioned provides an excellent example of remains that exhibit both intense scavenging and trauma (Passalacqua 2015).

Therefore, remains with evidence of excessive scavenging activity require more rigorous interpretative criteria, especially when differentiating trauma from taphonomic features. Thankfully, things like “tool impact signatures” provide one of the better means of differentiating trauma from scavenger activity (Passalacqua 2015). In other words, “impacts leaving well-defined, wedge-shaped impressions in bone—such as that seen on the frontal bone of the sexual abuse case—provide clear evidence of blunt force trauma” (Passalacqua 2015).

Conclusion

Though there are a handful of recognizable skeletal indicators of torture, there is always the possibility that even severe, long lasting and recurrent torture methods, such as falanga and severe beatings, which typically cause (presumably irreversible) periosteal reaction and occult fractures, will not be detected clinically or radiologically (Ozkalipci et al. 2012). It is because of the uncertainty of how the human body will respond to different forms of trauma that makes torture identification so difficult. Especially because, “many factors such as severity and frequency of trauma, age, gender, health condition, body structure and type of trauma can affect” how it is represented on the skeleton (Ozkalipci et al. 2013).

Therefore, a holistic approach should be taken when analyzing human remains. A holistic approach “should consist of trauma type, frequency, application type, event history, as well as physical and psychological findings” (Ozkalipci et al. 2013). Additionally, constructing a differential diagnosis between accidental and non-accidental mechanisms of torture is important for a clear mechanism of injury and death, and provides evidence of context which is critical for demonstrating torture judicially (Kimmerle 2008). By combining these findings, a more reliable interpretation of torture is possible.

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