Original Research

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Analysis of Injuries During Sacrifice in Feast of Sacrifice

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ABSTRACT

Objective: This study included patients who applied to the Emergency Department of Gaziantep University hospital with injuries that occurred during the sacrifice in first day of the Feast of Sacrifice of 2017.

Methods: Forty seven patients applied to our emergency department due to the injuries that occurred during animal slaughter and meat processing on the first day of in total of four-day feast in 2017.

Results: Total of 25.5% of these patients were female (n=12) while 74.5% were male (n=35). The mean age was 37.7±12.5 for males, 40.3±12.6 for females 38.05±12.35 for overall group. None (except for one (2.1%) of the accident victims was animal slaughterer and all of the injuries were in form of self-injury. There was tendon laceration in 10.6% (n=5) of the patients and skin and subcutaneous tissue laceration in 42 patients (89.3%). Cephalic vein laceration was detected in only one patient (2.1%) as arteriovenous injury. In one patient (2.1%) the digital nerve was partially lacerated. Five of the patients (10.6%) were hospitalized and the others were discharged after their treatment in emergency department. No permanent disability or loss of function was observed in one month's follow-up.

Conclusion: The injuries that may be encountered during sacrifice are preventable injuries. Accidental injuries caused by application of the sacrifice will be minimized when it's performed by professionals.

Keywords: Feast of sacrifice, laceration, extremity laceration, tendon laceration, emergency medicine

ÖZ

Kurban bayramında kurban kesimi esnasında yaşanan yaralanmaların değerlendirilmesi

Amaç: Bu çalışma, 2017 kurban bayramının ilk gününde, kurban kesimi esnasında yaşanan yaralanmalar nedeniyle, Gaziantep Üniversitesi Hastanesi Acil Servisine başvuran hastaları kapsamaktadır.

Yöntem: Dört gün süren bayramın ilk gününde, hayvan kesimi ve et işleme sırasında meydana gelen yaralanmalar nedeni ile 47 hasta acil servisimize başvurdu.

Bulgular: Bu hastaların %25.5'i kadın (n=12), %74.5'i erkekti (n=35). Ortalama yaş erkekler için 37.7±12.5, kadınlar için 40.3±12.6 ve tüm grup için 38.05±12.35 olarak bulundu. Bir hasta hariç (%2.1) olguların hiç biri kasap değildi ve tüm olgular kendini yaralama şeklinde idi. Tendon yaralanmaları %10.6 (n=5) hastada görülürken 42 hastada (%89.3) cilt ve cilt altı doku kesiği görüldü. Arteriovenöz yaralanma olarak, yalnızca bir hastada (%2.1) sefalik ven kesisi saptandı. Bir hastada dijital sinir kısmen kesilmişti. Hastaların 5'i (%10.6) hastaneye yatırılırken diğerleri acil servisteki tedavilerinden sonra taburcu edildi. Bir aylık izlem sonucunda kalıcı yeti yitimi veya işlev kaybı gözlenmedi.

Sonuç: Kurban kesimi sırasında karşılaşılabilecek yaralanmalar önlenebilir yaralanmalardır. Kurban kesimi esnasındaki yaralanmalar, işlemin profesyonel kişiler tarafından yapılması ile en aza indirilebilir.

Anahtar kelimeler: Kurban bayramı, kesi, ekstremite kesisi, tendon kesisi, acil tıp

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Introduction

According to Islamic belief, the sacrifice refers slaughtering the animal which has specific requirements under the proper condition in order to worship and earn the love of Allah. to be slaughtered with the proper conditions for the purpose of worship to, approach to and win the love of Allah (1). Every year, four days of sacrifice feast is celebrated as a religious feast. On this occasion, big and small cattle is slaughtered for worship. Slaughter is often done on the first day of feast (1). Injuries mostly occur in first day of the feast. Injuries often occur during slaughter or meat processing performed by non-professionals (2-4). The lacerations can be either in the form of

shallow skin lacerations or the large lacerations that can result in death (2). People might accidentally injure themselves or others.

In this study we analyzed the patients who applied to the Emergency Department (ED) of Gaziantep University hospital after the injury due to sacrifice on first day of the Feast of Sacrifice.

Method

Ethics committee approval was taken from Hasan Kalyoncu University for this study. In this study, 47 patients who applied to the ED of a university hospital with complaint of injuries related to sacrifice on the first day (September 1, 2017) of the Feast of Sacrifice were evaluated. Patient information was obtained by reviewing the hospital records retrospectively. The accident victims were recalled one month later for the purpose of evaluating permanent disability and sequalae. In the study, demographic characteristics of the patients, occupations, injured extremities, types of injuries, wound infection, limb amputation, injury complications and treatments were examined. Tetanus prophylaxis and antibiotic therapy were administered to all patients who applied to ED after injury. In addition, all of these transactions have been reviewed for per-patient costs over billed intercepts. The incidents were assessed without regardless of patients' occupation. al stratification. Patients who were over 16 years old and whose first application was made directly to our service related to laceration incidents which happened during slaughter or meat processing were evaluated. Patients younger than 16 years old at the time of injury were not included in the study, because they were not evaluated in our emergency department. In addition, laceration injuries that were not associated with the sacrifice on that day were excluded from the study. Verbal approval was taken from all of the patients who participated in the study.

Number and percentages for categorical variables and mean±standard deviation for continious variables were presented as descriptive statistics.

Results

During 24 hours of the first day of the Sacrifice Feast, 47 patients applied to ED due to injuries during slaughter or meat processing. 25.5% of these patients were female (n=12) while 74.5% were male (n=35). The mean age was 37.7±12.5 for male patients, 40.3±12.6 for female patients and 38.05±12.35 for overall group. None (except one (2.12%)) of the accident victim was animal slaughterer. 91.4% of the accidents occurred during daytime between 08:00 A.M.-17:00 P.M. (91.4%) (n=43).

The most frequently injured (87.2% n=41) extremity was upper extremity. The lower extremity injuries were less frequent (12.8% n=6). Out of all fingers, thumb (14.8% n=7) and fifth finger (12.7% n=6) were mostly injured. One patient had 2. and 3. fingers injury together. The distribution of the injuries by extremities was representedin Table 1. 89.3% (n=42) of injuries were simple injuries including skin-subcutaneous

Table 1: Distribution of injuries by extremities

	Upper extremity (n=41)							Lower ekstremity (n=6)	
	Thumb *	2nd finger	3rd finger	4th finger	5th finger	Hand	Wrist-Forearm	Foot	Leg
Gender									
Male	6	4	5	0	4	9	4	1	3
Female	1	1	0	1	2	3	2	2	0
Total	7	5	5	1	6	12	6	3	3

Note: In one case, both of 2nd and 3rd fingers were injured

Table 2: Distribution of tendon lacerations

Patient number	Injured area
1	Left hand 1st finger M. Extensor Pollicis Longus and Extensor Pollicis Brevis
2	Left hand 3rd finger M. Extensor Digitalis
3	Left hand 5th finger M. Flexor Digitorum Superficialis and Flexor Digitorum Profundus
4	Right hand 1st finger M. Extensor Pollicis Longus and Extensoris Pollicis Brevis
5	Right hand 2nd finger M. Extensor Digitorum Comminis and Indicis

tissue lacerations while 10.7% (n=5) were more severe injuries including tendon lacerations. Four patients (80%) out of 5 patients with tendon damage had more than one tendon lacerations and these were located on dorsal surface of hand. All of these five (10.7%) patients were male. The distribution of the tendon lacerations is shown in Table 2.

Only one patient (2.12%) had cephalic vein laceration as arteriovenous injury. In one patient who had lacerations in fifth finger on left hand Flexor Digitorum Superficialis and Flexor Digitorum Profundus tendons, the digital nerve was partially lacerated on the ulnar side at the same time (2.12%). No permanent damage was detected during follow-ups of this patient.

89.3% (n=42) of the patients were discharged from ED with primary repair and wound dressing. Local anesthesia during the operation was applied to all patients who underwent in ED. Five patients (10.6%) with tendon laceration were operated by plastic and reconstructive surgery. No permanent disability or loss of function was observed in patients in follow-up controls. A total of 6031.46 TL was billed for the 42 patients who were discharged from ED after primary repair and dressing. The average cost per patient was 143.60 TL. 5 patients who were operated by plastic and reconstructive surgery were billed 3946.28 TL in total and 789.25 TL per patient. A total of 9977.74 TL was billed for all transactions of 47 patients included in the study.

Discussion

According to Islamic belief, the Feast of Sacrifice lasts four days. However, the sacrifice can be done within the first three days. Slaughter traditionally been performed often on the first day of the feast (1). Therefore, injuries often occur on the first day (4). While the sacrifice is performed by men, women often take part in meat processing. For this reason, injuries are more common among men. In the study performed by Baştürk et. al. this rate was 85% in males and 85.5% and 84.2% in other studies, respectively (2,3,5,6). In a study conducted in Saudi Arabia male/female ratio was found to be M/F=7/1 (7). It was also found in our study that 74.5% (n=35) of all cases were male and this result was consistent with these mentioned studies. At the same time, all of the five patients who severely injured patients, tendon lacerations (10.7%), were male. Tendon, vascular or nerve laceration were not detected in female patients.

In our study, the mean age was 37.7±12.5 for men and 40.3±12.6 for women and 38.05±12.35 for overall group. While this means were 33.82 in men and 37.51 in women (2) in the study of Baştürk et al., in other studies, total of male and female patients mean age were reported as 32±14.35±15.39 respectively (3,5,8). 91.4% (n=43) of the patients applied to our emergency department between 08:00 AM – 17:00 PM during the day and in another study this proportion was calculated as 82%, similar with our study (6).

In our study, only one patient (2.12%) was slaughterer while these proportions were 3.7%, 3.3% and 8% in other studies (2,6,7). In our study, in line with other studies, injury among professionals was less observed.

In our study, 87.2% (n=41) of the patients were injured in upper extremity while 12.8% (n=6) were injured in lower extremity. The lower extremity injury percentage was calculated as 13.9% in one study (5). In the study of Avşaroğulları (3), 4 of the 54 patients were injured in lower extremity while in another study (4), 4 of 98 patients were injured in lower extremity. In our study, 76.5% (n=36) of the total injuries were on hand and fingers and the results of a study of Rahman et al. (7) were consistent with our study (73%). In another study, a total of 195 hand injuries were detected on the first three days of the Sacrifice Feast for four consecutive years (2011-2014) (8). In a study conducted in a meat packing plant, it was found that 60.8% of workers had finger injuries, 12.9% had hand injuries and 14.7% had forearm injuries (9) In our study the most common injuries were thumb injuries with the percentage of 19.4% (n=7) and fifth finger injuries with the percentage of 16.6% (n=6). In the study of Ersen et al., the most damaged finger was the second finger (33%) followed by the thumb and third fingers. The first three finger injuries accounted for 71% of all injuries (8). In our study the percentage of first three fingers from all injuries was 36% (n=17). We think that this difference is due to the fact that the study of Ersen et. al. was limited to the injuries at hand.

It was found that 4 of 5 (80%) patients, who had tendon lacerations, had extensor tendon lacerations. The incidence of lacerations in extensor tendons has been reported in other studies also (7,8). In studies which were aimed to compare hand injuries of both hands, the frequency of injuries was higher in the left hand (4,5,7). In our study, tendon lacerations in the left hand were more frequent (60%) in accordance with

these studies. Both of the hands were equally injured in the study of Avsarogulları (3). In the series (8-10) where 195 patients were evaluated, it was found that tendon of M. Extensor Pollicis Longus was the most common (33%) injured tendon and it was found to be consistent with our study (40%).

In the study performed by Basturk et. al. (2), 1.8% of the cases had muscle, nerve, tendon and blood vessel injuries. In the study of Sika et al. (10) blood vessels and nerve injuries were reported in 50 patients. In another study, this rate was reported as 5.8% (5). In Ersen's (8) 195 case series study, A. Radialis was injured in 35% of 20 cases in which injury had taken place in the forearm. In our study, Vena Cephalica was lacerated in one patient (2.12%) and no artery laceration was observed in any of our patients. In one (2.12%) patient with multiple tendon lacerations, the digital nerve was also partially lacerated. No other cases with nerve lacerations were detected besides this case. In our study, we think that one of the reasons, for the lower number of patients applying to ED with vein and nerve lacerations, was that our study limited to the first day of the holiday. In addition to that, the socioeconomic level of the resident population of neighborhood of our hospital is relatively high. This increases the likelihood that this population has purchased services from professionals. As a result, we think that this situation affects both the number and type of injuries.

In the study of Basturk et. al., 79.6% of the cases were discharged from ED after primary repairment and dressing (2). In other studies, this rate was 82.5% and 92.3% (6,7), respectively. In another study, only 52 of 98 patients were treated with primary repairment in ED (4). In our study 42 patients (89.4%) who underwent primary repair were discharged from ED as outpatients. The remaining 5 patients (10.6%) were operated by plastic and reconstructive surgery department. The percentage of patients who underwent surgery was 11.7% and 7.7% in other studies, respectively (6,7).

All these injuries necessitate additional cost to social security institutions. Mean cost per patient was calculated as 104.76 TL in the study conducted by Bildik et al. (6). Costs have not been taken into consideration in other studies. In our study, total of 6031.46 TL was billed for 42 patients who were discharged from ED after primary repair and dressing. An average of 143.60 TL was spent per patient. On the other hand, 5 patients who were operated by plastic and reconstructive surgery were charged 3946.28 TL in total and 789.25 TL per patient.

Conclusion

Some of the injuries that may be encountered during sacrifice are preventable injuries. The application of the sacrifice performed by professionals will minimize the mortality and morbidity rates of accidents. Special precautions should be taken on the ED against the accidents. The workload on ED during the Feast of Sacrifice is increasing. It is a medical obligation to prevent evitable lacerations and to decrease number of patients. Especially local governments should increase the professional facilities for the purpose of slaughter and meat processing to meet the needs of the people in an appropriate way. On the other hand, emergency department doctors should make adequate technical and equipment preparation before fest days.

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Informed Consent: Written informed consent was obtained from the patient.

Ethics Committee Approval: Ethics Committee approval was obtained from the local ethics committee.

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