Accidental injuries during muslim pilgrimage

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ABSTRACT

Objective: The diseases that occur during Hajj are a unique medical problem. The aim of this study is to highlight the incidence, the type and the early surgical management of trauma during the Hajj period.

Method: A prospective study was carried out during a 15 day-period conducted in two parts in the emergency room, and a follow-up of the admitted patients in the surgical department.

Result: The number of trauma cases who attended the emergency department was 713 patients, 248 patients were admitted in different surgical departments, together with the intensive-care unit. Sixty-five percent of the patients were discharged from emergency room as they had minor trauma. Sixty percent were involved in road traffic accidents, 15% had injuries in Holy Haram. Limb fracture accounts for 53% of total trauma admissions. Two patients died in the first 48 hours.

Conclusion: Trauma during Hajj is a real surgical problem which deserves more attention. Orthopedic and Neurosurgical cases are the most common surgical cases during the Hajj period.

Keywords: Trauma, Emergency Department.

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Every year more than 2 million Muslims, from all over the world, come to Holy Makkah to perform Hajj.[1-6] The planning and preparation for each Hajj in the government offices, usually start from the end of the previous hajj, and this becomes maximum during the month of Dhulqaidah (the 11th month of the calendar Hijrah) where Hajjies start to arrive in Makkah. The maximum gathering of Hajjies in Makkah is between the 1st and 15th day of the 12th month of Hijrah.[6] Health diseases, including trauma are difficult to manage during Hajj due to the following factors; 1. Hajjies come from different countries, and have different languages.[2-6] 2. Hajjies perform the same rituals over a short period of time which results in over crowdedness, and mass movement from one place to another. 3. The relatively small area of Makkah and holy places result in crowdedness and difficult traffic movement. In this study we try to highlight the occurrence of trauma cases, during Hajj, which were admitted in Al-Nour Hospital, Makkah, Kingdom of Saudi Arabia.

Method. A prospective study, was conducted in Al-Nour Specialist Hospital, Makkah, during the period 1/12 – 15/12 1415 Hijrah. Al-Nour Specialist is a 500 bed modern hospital and is the main hospital in Makkah containing all sub-specialties. The study was conducted in two parts: 1. The first part was carried out in the Emergency Room, and the data, was registered in a special designed 15 point proforma history form. This included the day, time, serial number, file number, sex, nationality, place of injury, time of accident, source of transport, systemic blood pressure, pulse rate, system involved and diagnosis on admission. 2. The 2nd part, included admitted cases and their follow-up for 48 hours. The

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Table 1 - Place injuries are sustained.

Place of injury (Total)	I.C.U.	Surgery	Blood Transfusion	Limb Fracture	Head Injury
Road Traffic Accident (151)	19	37	21	74	69
Home (42)	0	17	3	18	3
Work (18)	1	6	1	4	2
Haram (37)	1	22	9	35	2
Total (248)	**21**	**82**	**34**	**131**	**76**

I.C.U=Intensive-care unit

data collected included whether surgery had been carried out, or not, blood transfusion, the need for special procedure, intensive-care unit (I.C.U) admission and mortalities. 3. The data was entered into a personal computer file using the Excel program, and the statistical analysis was carried out using statistical package for social sciences version 7.1 [SPSS].

Results. The number of trauma cases seen in the emergency room during the period from 1-15/12/1415 was 713 patients. Out of those, 465 patients were discharged from the Emergency Room as they had minor traumas, such as superficial cut wounds, soft tissue contusion, superficial burn of less than 10% of the surface area. The remaining 248 were admitted in the hospital and those were the patients whom we followed up for 48 hours and included in this study. One hundred and ninety five patients were male and 53 patients were female. The age of the patients range from 25 days-90 years. One hundred and sixty one patients (65%) were brought to the emergency room by ambulance, the remaining 87 patients were brought in police cars or by their relatives. The peak time of hospital admission was between 6–12 pm, which is the time when most hajjies were outside their homes and tents. There was no difference between the admission on the weekend, Thursday (11%) and the beginning of the week, Saturday (11%). One hundred and four patients (42%) were transferred from different hospitals in Makkah and Mena, as Al-Nour Hospital is the only specialist hospital in Makkah. As shown in Table 1, 151 patients (60%) were involved in road traffic accidents (RTA's), and these sustained different types of injury, the most common were limb fractures and head injury. Thirty seven patients (15%) had injuries at Holy Haram, and all of these patients, except 2, had limb fracture, and the 2 patients had head injuries. Half of home injuries were burn cases, and the others were limb fractures and head injuries. Work injury cases were mainly for soft tissue, which included deep cut muscles and cut tendons, as well as burn cases. Table 2 shows the main systems involved in injury and whether the system was involved alone or with other systems. As shown in Table 2, 81 patients had surgery in the first 48 hours. These surgeries were open and closed reduction in 61 patients; burr hole and craniotomy in 12 patients, escharotomy in 5 patients and laparatomy in 3 patients.

Table 2 - Type of system involved.

System involved (Total)	Cases of single injury	Multiple system	I.C.U	Surgery
Bone (131)	95	36	6	61
Head (76)	26	50	19	12
Burn (30)	30	0	2	5
Abdomen (10)	0	10	3	3
Total (247)	**151**	**96**	**30**	**81**

I.C.U=Intensive-care unit

Discussion. Trauma is one of the major causes of death in surgical patients. Trauma management is a difficult task, and requires great effort and demand, starting from the site of injury which includes pre-hospital treatment and transfer of the patient to an appropriate center. This type of work is quite difficult during busy times like the hajj season, where millions of people gather at a specific time and in a relatively small area. Several health problems were studied during the hajj period including heat stroke and exhaustion,[5,7,8] medical,[4] surgical,[6] renal[3] and epidemic problems.[1,9-10] To our knowledge the study of trauma during hajj is very limited and in most

literature, discuses health problems during Hajj, focusing on medical disease. This may be due to the fact that medical diseases are more prevalent than surgical ones, but unfortunately surgical patients are much more serious. Patients from more than 26 countries were seen, speaking different languages which makes history taking such as mechanism of injury, loss of consciouness, difficult to obtain. In our study, we included all the trauma cases that attended the emergency room, regardless of the cause or the severity of the injury. We found that one third of the trauma patients who attended the hospital had been admitted. The pattern of cases shows that the Orthopedic and Neurosurgical cases are more common than the others, as 83% of trauma cases are admitted to these 2 departments. This may indicate that these 2 departments should be supported by more medical personnel, and need to be well-equipped during the hajj time. Unfortunately 15% of patients are injured during Holy Haram, an accident that can be prevented by better education of hajjies, particularly the elderly to avoid crowdedness at the peak time between 6-12 pm, when most Hajjies perform prayer and Tawaf in Holy Haram. As 42% of the patients are transferred from different hospitals in Makkah and Mena, this may indicate that the number of Orthopedic, Neurosurgeons, and Plastic Surgeons should be increased in Makkah hospitals during Hajj. Another cause of referral to Al-Nour Hospital was the high demand for I.C.U beds, as 16% of transferred patients were admitted to the I.C.U and the occupancy rate of I.C.U. was 100%. As part of the Hajj duty activities, the patient has to move from one area to another, therefore we choose 48 hours follow up. Although the follow-up of the patients was short, the improvement, regarding the vital signs and the general condition of the patient was excellent. Only 27 patients failed to improve, these patients were victims of multiple traumas and severe burns of more than 50% surface area. Only 2 patients died, one was a 60-year male who had sustained RTA and had C5 and C6 spinal fracture, severe head injuries, blunt abdomen injury and a fractured femur. The other was a 44-year old male who had a severe head and thoracic injury.

In conclusion, trauma during hajj is a real surgical problem. The number of Surgical staff and the equipment in Orthopedic and Neurosurgery departments should be increased. The number of I.C.U. beds should be increased, traffic and Hajj movement in Makkah and Mena should be improved, and as early transfer of trauma patients is highly recommended, hajjies should be taught how to avoid crowdedness in Holy Haram and other Holy places.

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