

Analysis of 45 Stab-wound and Gunshot Injuries admitted in the Yemen German Hospital during 2002-2005 (A descriptive study)

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Abstract

This research has the aim to investigate the stab and gunshot injuries in the Yemen, based on the cases delivered to the Yemeni-German Hospital in Sana'a. The main points are assessing circumstances and causes of the injuries, evaluating initial trauma management at site, determining the main body sites of injury, discussing the situation of the emergency services in the country and the problems connected with this lack. It uses a questionnaire to investigate about each case, evaluates the questionnaires adding some interview information and background research.

The researchers came to the conclusion, that gunshot injuries in the Yemen are common due to the fact that weapons are kept in every household in the country. The new law foresees regulations to gun possession, holding and trade, which are to be enforced to the benefit of the society. The researchers further stipulate the necessity of structuring an emergency service, which is equipped to react to accidents and give necessary on site trauma management and offers the suitable transportation for wounded patients.

Introduction

Yemen is one of the few countries in which carrying and possessing weapons is common. For the Yemeni, weapon is a symbol of his honor, which cannot be put aside. Weapons in different forms are used daily at Yemeni homes. The people consider their weapons as family treasure and honor, like the traditional dagger (Djambia), which is traded high on the one side, meaning that it can be used as collateral for loans. On the other Hand Djambias are the symbol for men and families' honor, so that they can be put as a guarantee for peace treaties or agreements. Fire-arms have spread during the last 100 years all over the country. They have also taken the same role and value as the Djambias and the Swords in the past. The development since the revolution of 1962 and the war to stabilize the republic, which lasted over 15Years, was very dramatic. Yemenis got used to weapons and could get

and posses quite a wide range of them. This spread of weapons increases the likelihood of accidental and non-accidental injuries which may in many cases be fatal. This study analyzes all cases received in the Yemen German hospital with stab-wound or gunshot injuries during 2002-2005.

The Government of Yemen is aware of the weapon problem and its consequences. There were therefore quite early attempts to control weapon possession by law. The efforts to apply controls on weapon trade, weapon carriage and transportation were variable during the last 45 years. Since 4 years weapon control efforts were crowned by a relatively

firm law, which was ratified by the Yemeni parliament. This law forbids the possession and carriage of fire arms without a valid license. This law was gradually enforced in

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the main cities and real efforts are made to collect and buy weapons from the people. Despite these efforts it's not likely to see a weapon free Yemeni Society in the near future. The number of firearms in the people's hands is estimated to be 50 million pieces.

Till today, there is no organized emergency ambulance service available in Yemen. Many patients are transported to hospitals in private cars, by people not experienced in emergency care, resuscitation or first aid procedures at the site of accident or injury. This study emphasizes the importance of establishing an emergency call system in the Yemen.

OBJECTIVES

- 1- To assess the circumstances and causes of gunshot and stab-wounds injuries in Yemen.
- 2- To evaluate the initial management of trauma at the site of injury.
- 3- To project effect of the absence of an emergency call system in Yemen.
- 4- To determine the organs mostly affected by the injury and the methods of treatment.

SUBJECTS & METHODS

The research was done between 01/01/2002 until 31/12/2005. Forms were prepared to register the cases and their development (fig 1) . The forms were filled in as soon as a case was delivered into the hospital. The researcher himself and his assistants filled in the forms. The form contained questions about patients age, sex, time and place of trauma, way of transportation, emergency measures taken at the site of the accident and organs and parts of the body affected by the trauma. Questions about the circumstances and causes of the injury were dropped after the researcher discovered that this area was too sensitive, to get true information.

At the hospital, the patients were examined, their injuries were evaluated and a treatment suggestion was made. After that the patients and their relatives were to decide whether they can be treated at the hospital and bear the

cost of treatment or not. If they agree on the treatment plan and cost, they were admitted and treated accordingly. In case of treatment at the hospital, the patients were mostly exposed to a surgery (table 7). Most of the cases were successfully cured (table 8).

If they were not willing or not able to pay for the treatment, they were getting first aid help and stabilizing measures so that they can be transported to a government hospital.

RESULTS

1) Age and gender of the patients :

Table 1 is presenting the distribution of cases according to gender and age group. Table 2 is containing the distribution of cases between accidental or non-accidental injuries, while table 3 is showing the geographic distribution of the cases.

Table (1) : distribution of cases by the patients by age group

Age	No.of patients	% of patients
1-10	1	2.2
20	8	17.7
30	18	40
40	11	24.4
>40	7	15.5

We can see from table (1) that more than two thirds of patients are between 20 and 40 years of age. This period of age is the most affected because youths in Yemen are more involved with revenge and in carrying guns and other weapons than other age categories

Table (2): Distribution of patients by gender

Gender	No. of patients	% of patients
Male	38	84.4
Female	7	15.6
Total	45	100

Most patients were males (84.4 %) and many of the female patients are affected accidentally by their relatives

or by an unknown origin, since they are not much concerned with revenge events or by carrying or cleaning weapons (table 2).

2) Is it accidental or in purpose?

Table (3) : distribution of cases according to the cause of the trauma

Cause of injury	No. of patients	Males	Females	% of patients
In purpose	25			55.6
Accidental	20			44.4
Total	45			100

The cases were divided almost equally between accidental and in purpose, and this indicates the high percentage of accidental cases because of the spread of weapons between people in Yemen and the fact that weapons are not safely kept.

3) Where did the accident happen (Geographical location)?

Table (4): Analysis of cases according to the site of accident

Area	No. of patients	% of patients
Sana'a	28	62.2
Outside Sana'a	17	37.8
Total	45	100

Since the Yemen German Hospital is considered a referral hospital in Sana'a, many patients (37.8 %) were referred from outside Sana'a to it, and those patients received primary care in a hospital or a health center, before transferred to the hospital.

4) How was the patient transported?

Table (5): Analysis of cases according to the method of transport

Method of Transport	No of patients	% of patients
Private car	37	82.2
Ambulance	3	6.7
Police car	5	11.1
Total	45	100

We can see that majority of cases (even those coming from outside Sana'a) were transported by a private non-equipped car and by people who do not know how to carry or transport patients from the site of accident to the hospital. This also gives an indication that there is no emergency call system in Yemen.

5) Was the patient given any medication before the arrival to the hospital?

Table (6): Distribution of cases by medications received prior to hospital admission

Patient received :	No of patients	% of patients
Blood	4	8.9
IV Fluid	12	26.7
Analgesics	15	33.3
Anti tetanus	6	13.3
None	28	62.2

More than half of the patients did not receive any primary care medicine until they reached the hospital. The second half was injured outside Sana'a and taken to a hospital or a primary care center where he received blood or IV fluid... From the 23 cases 6 cases only were given anti tetanus serum before reaching our hospital

6) Body parts injured(site of injury) :

Table (7):Distribution of cases according to the body parts injured

Body part	No of patients	% of patients
Head & Neck	8	17.8
Chest & Heart	4	8.9
Abdomen	22	48.9
Limbs	11	24.4
Total	45	100

Table (6) illustrates that half the cases were injured at their abdominals. The second half of the injuries was distributed among the other Parts of the body.

7)How were the patients treated?

Table (8): Analysis of cases according to the method of treatment

Method of treatment	No of patients	% of patients
Surgical Intervention	36	80
Conservative	9	20
Total	45	100

The majority of patients required an intervention (operation, chest tube ...) for their injury, and only 9 cases were treated conservatively, and this indicates that most of the injuries were invasive.

8)Outcome of treatment:

Table (8): Cases according to the treatment and its outcome

Outcome	No.of patients	% of patients
Further transferred into another hospital due to lack of funds or to the wish of relatives	12	26.667%
Brought out of the country to be treated abroad after a short period	5	11.111
Died during surgical intervention	3	6.667

Died during transportation	2	4.444
Were exposed to secondary healing	3	6.667
Were successfully treated and cured fully in the hospital	20	44.444
Total	45	100

DISCUSSION

The importance of injury as a major public health problem worldwide was highlighted in the seminal report “ The Global Burden of Disease ”Worldwide, injuries account for approximately one in eight deaths among males and one in 14 deaths among females (1). Few studies have measured the burden of non-fatal injuries and compared it with that of other health conditions. In one of these studies, data for the adult population were obtained from the 2001 Spanish National Health Interview, a household telephone survey of the Spanish Population. Results revealed that injuries contribute 11-23% of the total health burden of the adult Spanish population, depending on which of the six indicators is used. They rank first and second out of the 11 conditions with regard to emergency visits and hospital admission, respectively.

They rank third to sixth when other measures are chosen (i.e., reduction in leisure activities, reduction in main activities, consulting a doctor, bedridden for half a day). Rheumatologic, cardiovascular, and respiratory conditions are the only other conditions with a burden of comparable magnitude (2).

It is important for the field of injury epidemiology to move from the largely descriptive studies that have predominated in the literature to the application of more rigorous analytical methods for defining the underlying casual patterns of injury. Studies focusing on the descriptive epidemiology of injury have and will continue to serve the field well, perhaps even more so than in other fields, since the proximal etiology of injuries (i.e., acute exposure to

physical agents such as mechanical energy) is well known (1).

Trauma can cause full or partial post traumatic stress disorder (PTSD). One study in Detroit estimated that the conditional risk of PTSD following exposure to trauma was 9.2 %. The highest risk of PTSD was associated with assault violence (20.9 %) (3).

Pre-hospital care of injured patients is very important. Our study has highlighted this aspect by the detailed questions regarding the way of transport to the hospital and the medications given to the injured before arrival to the hospital. One study which included the observations of Pediatric surgeons during the Persian Gulf war, stated that the overall mortality rate for children admitted to the hospital was 12 %, but no injured child died as a result of trauma. Complications of dehydration or malnutrition in infants accounted for all the deaths (4).

In our study , Head and Neck injuries accounted for 17.8 % of all trauma cases covered by the study. In another study, Head injuries accounted nearly 50 percent of all injury deaths and remain the leading cause of injury, death and disability among children and young adults. Animal and human cadaver research combined with rapidly evolving techniques of computerized modeling will continue to play a critical role in increasing our understanding of injury mechanisms (1).

RECOMMENDATIONS

- 1)Establishing an emergency call system in Yemen
- 2)Educating people how to carry and transfer patients from the site of injury to the hospital.
- 3)Educating people about the primary care measures that can be done at the site of accident or injury.
- 4)Regulating weapons carrying and possessing in Yemen, and educating people about its dangers.
- 5)Performing similar studies in other hospitals for comparison.

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