

PATTERN OF PENETRATING ABDOMINAL INJURIES AT THE UNIVERSITY OF PORT HARCOURT TEACHING HOSPITAL NIGERIA

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ABSTRACT

BACKGROUND

The pattern of abdominal injuries in Port-Harcourt ownship and its surrounding towns and villages was studied. There is under reporting of these penetrating abdominal injuries (PAI) in our locality.

METHODS

A cross sectional study of all patients presenting with penetrating abdominal wounds to the Accident and Emergency unit of the University of Port Harcourt Teaching Hospital from July 2006 - February 2007. Data were collected and analysed using SPSS 14 for Windows® statistical software. Ethics committee approval and patients consents were obtained.

RESULTS

A total of fifty-two (52) patients were included in the study in which males accounted for 80.8%. The peak age range of injured patients was 21-30years with mean age of 29.5±11.3years. The predominant causes of these injuries were armed robbery attacks (38.4%), secret cult activities (30.8%) and communal / ethnic or political conflicts (5.8%). Majority of these victims had gunshot wounds (69.3%), stab injuries with knife (13.5%) and broken bottles (11.5%) amongst other presentations. The patients presented mostly with abdominal pains (96.1%), abdominal wounds (94.2%), anaemia (50.0%), evisceration of gut (19.2%) and shock (15.3%). Forty-nine (94.2%) patients had laparotomy due to the severity of their injuries. Other patients (5.8%) with minor abdominal wounds were managed conservatively.

CONCLUSION

There is an increase in the rate of penetrating abdominal injuries (PAI) among the civilian population in Port-Harcourt municipality and the surrounding neighbourhood. Gunshot, cultism and stab wounds were more causal factors of the abdominal injuries, depicting a

more violent society from rising crime.

Keywords: *Penetrating abdominal injury, violence, accidental abdominal injuries.*

BACKGROUND

Penetrating abdominal injuries usually results from missiles and other sharp objects including stab wounds affecting the abdominal wall and its intra peritoneal viscera [1,2]. When the causative agents are missiles or explosives, higher morbidity rate occur because of the resultant severity of the wounds [3-5]. Such injuries are commonly found during war times, but of recent there had been rising rate of trauma including penetrating abdominal injuries (PAI) in Nigeria and other African countries [5-7]. The reasons adduced for the increase of injuries is the ready availability of firearms and acts of spontaneous violence [5,7,8].

Well known aetiological factors earlier noted include suicide, homicide, accidental injuries, civil unrest and wars [9]. In some Nigerian studies, armed robbery, political, communal clashes, secret cult activities and other inter-personal violence were responsible for these type of injuries [10,11]. The primary and secondary weapons reported in the literature include guns, broken bottles, knives and bullet fragments [12,13].

There is under reporting of these penetrating abdominal injuries (PAI) in our locality. We therefore set out to investigate the pattern of occurrence of penetrating abdominal injuries among residents in Port-Harcourt and its environment with a view to educate the general public on avoiding such injuries.

METHODS

This is a cross-sectional study carried out at the University of Port-Harcourt Teaching Hospital, Nigeria from July 2006 - February 2007. Fifty-two (52) patients with penetrating abdominal injuries were seen at the Accident and Emergency unit of the hospital during this period and were

all included in the study.

After comprehensive clinical evaluation and necessary management, patients' data were recorded in a 25-item protocol with relevant information on biodata and identification, causes and effects of trauma, clinical features, treatments and its outcome.

Data collected were coded and entered into a spread sheet using the SPSS 14.0 for Windows® statistical software which was also used for analysis. Results are presented as percentages, means and standard deviations in tables and figures. Approval was obtained from the Ethical committee of the University of Port Harcourt Teaching Hospital.

RESULTS

Of the fifty-two (52) patients with penetrating abdominal injuries (PAI) treated within the period of the study, 42 were males (80.8%) and 10 females (19.2%). The age range was from 10-60 years with mean age at 29.5± 11.3 years. The male to female ratio was 4:1 as in Figure 1.

The occupation of those injured were traders (23.0%), students/pupils (21.2%), civil servants (11.5%), unemployed persons (9.6%), commercial drivers (7.6%), police/military personnel (5.7%) and the other occupations constituted 21.3% as shown in Table 1.

The weapons used to inflict these injuries were guns (69.3%), knives (13.5%) broken bottles (11.5%) and other weapons accounted for 30.7% as shown in Table 2.

Predominantly the types of persons responsible for the penetrating abdominal injuries (PAI) were armed robbers (38.5%), secret cult activists (30.8%) as shown in Table 3.

The arrival time for most our patients to hospital was within 6 hours of injury, while a few others arrived after 72 hours (Table 4). The mean arrival time was 4.6±7.3 hours.

Clinical features recorded on presentation of patients to hospital were abdominal pain (96.1%), abdominal wounds (94.2%), abdominal distension (73.1%), Anaemia (50.0%), evisceration of gut (19.2%) and shock (15.4%) as shown in Table 5.

Table 1: Occupational pattern of patients with PAI

OCCUPATION	Frequency	Percentage
Civil service	6	11.5
Business	12	23.0
Driving	4	7.6
Police/Security	3	5.8
Mechanic	3	5.8
Electrician	1	1.9
Mason	1	1.9
Labourer	2	3.8
Tailor/seamstress	1	1.9
Farming	1	1.9
Fishing	2	3.8
Student/pupil	11	21.5
Unemployed	5	9.6
Total	52	100

Table 2: Types of weapons implicated in PAI patients

Weapon	Frequency	Percentage
Knife	7	13.5
Matchet	2	3.8
Broken bottle	6	11.5
High velocity gun	24	46.2
Low velocity gun	12	23.1
Other penetrating object (sharp edge of stick)	1	1.9
Total	52	100

Table 3: Remote causes of injuries

Causes	Frequency	Percentage
Communal/ethnic or political conflict	3	5.8
Armed robbery attack	20	38.4
Secret cult activities	16	30.8
Police/soldier gun-shot	4	7.7
Stray bullet	3	5.8
Fighting/assault	4	7.7
Assassin	2	3.8
Total	52	100

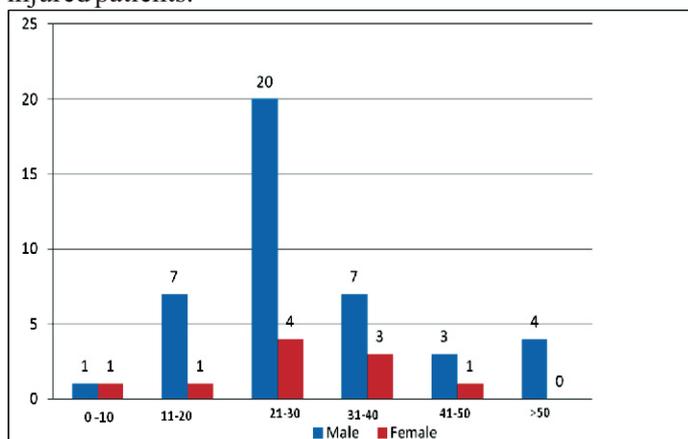
Table 4: Time interval at presentation in the Hospital

Time (hour)	Frequency	Percentage
< 1	2	3.80
1-6	40	77.0
7- 24	5	9.60
25 72	3	5.80
>72	2	3.80
Total	52	100

Table 5: Clinical features of penetration abdominal injuries

Clinical Feature	Frequency	Percentage
Abdominal pain	50	96.1
Abdominal distension	38	73.1
Bleeding abdominal wound	49	94.2
Vomiting	8	15.4
Nausea	35	67.3
Haematuria	2	3.8
Urinary retention	2	3.8
Dysuria	5	9.6
Fever	10	19.2
Chest wound	4	7.7
Constipation	2	3.8
Anaemia	26	50.0
Shock	8	15.4
Evisceration	10	19.2
	2	3.8

Figure 1. Bar chart showing age and Sex distribution of injured patients.



DISCUSSION

Trauma is a dreaded event and has remained the leading cause of death in the first few decades of life in industrial countries [3]. Its prevalence has been under reported in developing countries like in Nigeria. Penetrating abdominal injuries are usually commoner in war times [5]. This study is recording increasing numbers of PAI in peace times in Nigeria as compared to previous studies [5] and similar to other reports [7,14,15].

Penetrating abdominal injuries usually present to hospital as emergencies and often with frightening and remarkable consequences [5]. Skilled personnel such as surgeons and a full complement of a functional surgical unit as in secondary and tertiary institutions are necessary to treat these cases to avert morbidity and mortality.

Various weapons have been reported to be responsible for these injuries both in rural and urban medical centres worldwide especially guns as depicted by this study [10]. As at 1960, a hospital based study in Lagos recorded as low as 5 cases of penetrating abdominal injuries, annually contrary to that of this study [5]. In recent times, much higher levels of these injuries were witnessed in other Nigerian and African cities [7,14,15]. The reasons adduced to this may be the easy access and ready availability of guns, social vices such as cultism, organised crime and the increasing waves of communal clashes in Nigeria. These civil unrest and crimes were suggested by some authors as etiological factors implicated for these injuries as recorded in this study [8,9]. As in this study, other reports noted males were predominantly injured [5,8,9].

The age range of victims of penetrating abdominal injuries has been reported as between 12-70 years with a peak of 20-29 years in Irrua, a sub urban community in Edo State Nigeria [8]. This is similar to the findings in our study.

In this study, the time interval from the point of injury to when the patients arrived in hospital was more than the usual 30 minutes recommended in advanced countries [16]. This delay may not be unconnected with the dilapidated infrastructure in Nigeria and the inefficient or non-existent ambulance services [18]. This delay has been attributed by some authors to be detrimental to patients survival as hypovolaemic and septic shock were common in these group of patients [3,4,17].

Abdominal wounds with evisceration of gut were among other findings noted in PAI in our centre and is similar to that of other authors [19,20]. Guns (high and low velocity) were mostly used to inflict the wounds which is in variance to studies by some scholars that only low velocity guns were widely used in civilian environment [21]. Similar to our findings, others worldwide recorded guns as weapons commonly used to inflict Penetrating abdominal injuries [9,15,16].

Armed robbery and secret cult activities were the outstanding etiological factors noted in this study and is similar to that of other studies [9,10]. Nevertheless these negatives activities were suggested to be as a result of unemployment, economic hardship and falling standard in our society especially Niger Delta region, as youth continuously agitate for resource control [22].

The modalities of treatment offered to these patients were both operative (laparotomy) to those with penetrating abdominal injuries and conservative management to those with superficial abdominal stab wounds. Most surgeons agree with these modalities of management [21,23,24]. Mandatory laparotomy for all patients with penetrating abdominal injuries as advocated by Shaftan in the past was discouraged in this study because their negative consequences post operatively were unrewarding [25-28].

CONCLUSION

Penetrating abdominal injuries are noticed commonly among civilians in Port Harcourt city and its surrounding towns and villages. Use of high velocity guns is generally getting more common causing PAI in Port Harcourt, with armed robbery and secret cult activities as the common causative factors. There should be enlightenment campaign among the public against illegal use of firearms. There is need to provide employment so that many youth could be gainfully employed, hence avoid such vices as secret cults and armed robbery.

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