Brief Report

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Evaluation of the Frequency and Type of Damages to the Ears, Nose and Throat in Patients Referring from Forensic Medical Centers to Ayatollah Rohani Hospital in Babol, Iran in 2012

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ABSTRACT

BACKGROUND AND OBJECTIVE: Currently, trauma is regarded as one of the most serious problems in societies, resulting in irreversible damages and injuries in individuals. Trauma as a result of assault, injury or accident is of grave significance, especially in developing countries. The purpose of the present study was to evaluate the frequency and type of injuries to the ears, nose, and throat in patients referring from forensic medical centers to Ayatollah Rohani Hospital in Babol, Iran..

METHODS: In this cross-sectional study, patients referring from Babol forensic medical centers were examined by an otolaryngologist in 2013. In this study, the cause and type of damages, as well as demographic characteristics, were collected and recorded in a checklist.

FINDINGS In total, 238 cases were included in this study. The mean age of participants was 35.40±11.58 years. The majority of subjects were within the age range of 18-44 years. Ear damage was one of the common complaints in 146 subjects (61.34%). Overall, 94 cases (39.5%) had left ear injuries, 35 cases (14.7%) had right ear injuries and 17 cases had experienced damages to both ears. Dispute and assault were the major causes of hospital admission in 158 patients.

CONCLUSION: According to the results of this study, the highest incidence of trauma was reported in young individuals because of dispute and assault. Therefore, the dispute and assault are decreased in youths by preventing the effective agents.

KEY WORDS: Forensic Medicine, Trauma, Dispute, Assault, Ear, Nose and Throat.

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Introduction

Currently, trauma is regarded as an important issue in medical circles, resulting in irreversible damages and injuries, heavy costs and attrition in human resources including professionals at medical and forensic medical centers. Overall, traumas are known as the leading cause of death in the first half of life and the fourth cause of death in general (1). The main causes of trauma can be categorized into

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two groups: intentional (e.g., self-mutilation, suicide, homicide and fights) and unintentional (e.g., motor vehicle accidents and occupational accidents) (2). In forensic medicine, assault includes damages to the human body, caused by direct or indirect collision with mechanical, physical, chemical and psychological factors. According to statistics reported by forensic centers of the country in November 2004, the total number of outpatient visits was estimated at 23,193 cases, among which 9,456 individuals suffered from injuries caused by assaults; these cases accounted for 41% of all visits (3). Attacks were mostly aimed at the head and face and less at the pelvic area (4, 5). In addition to assaults, accidents and road incidents are of great significance, especially in developing countries. Each year, more than 1.26 million people die due to car accidents, worldwide (6). In Iran, road accidents cause 18,000 cases of death and 300,000 cases of injury and disability, each year. Moreover, in USA, 160,000 people die due to various traumas, and 500,000 individuals develop permanent disabilities, each year (7, 8).
Considering the abovementioned issues, this study was performed to evaluate the frequency and type of damages to the ears, nose and throat in patients referring from forensic medical centers to public hospitals of Babol, Iran.

Methods

In this cross-sectional study, patients referring from forensic medical center of Babol were examined by an otolaryngologist in 2013. If necessary, paraclinical tests such as radiography, magnetic resonance imaging and audiological tests were performed to establish a definite diagnosis. The cause and type of damage, as well as demographic characteristics such as age, gender, occupational status, educational level, type of accident and hearing impairments, were recorded in a checklist. For data analysis, descriptive statistics and Chi-square test were performed, using SPSS version 20. $p<0.05$ was considered statistically significant.

Results

The total number of cases referring from forensic medical centers to an otolaryngologist was 238 in Babol, Iran in 2013. Overall, 192 (80.7%) and 46 (19.3%) cases were male and female, respectively. Also, 185 cases (77.7%) were married and 53 cases (22.3%) were single. The mean age of participants was 34.9±11.58 years. Subjects' age ranged between 6 and 67 years. The mean age of male participants was 35.5±13.8 years, and the mean age of female subjects was 34.97±9.28 years. According to the results, dispute and assault were the most common causes of accident (fig 1). Most patients were within the age range of 18-44 years (table 1).

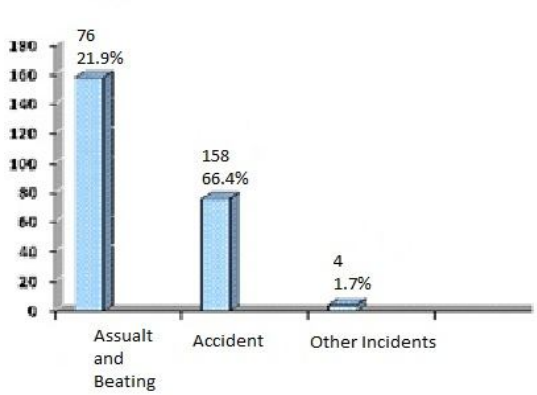


Figure 1. The frequency and type of damages to the ears, nose and throat in patients referring from forensic medical centers to Ayatollah Rohani Hospital in Babol, Iran.

Table 1. The frequency of age of patients referring to ear, nose, and throat clinics of Babol public hospitals in 2013

Age (years)	N(%)
<18 years	13(5.5)
18-44 years	176(73.9)
45-59 years	44(18.5)
≥60 years	5(2.1)

Moreover, 182 subjects (76.5%) had high school diplomas or lower (table 2). Ear injuries were among common complaints in 146 subjects (61.34%). Overall, 94 cases (39.5%) had left ear injuries, 35 cases (14.7%) had right ear injuries and 17 cases had experienced damages to both ears. Among patients with head and facial traumas, referring to ear, nose and throat clinics of Babol public hospitals, 57 cases (9.23%) suffered from ear injuries (table 3).

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Table 2. The frequency of occupational status and educational level in patients referring from forensic medical centers to ear, nose and throat clinics of Babol public hospitals in 2013

Variables	N(%)
Occupational status	
Self-employed	159(66.8)
University student	31(12)
Employee	24(10.1)
Housewife	24(10.1)
Educational level	
Illiterate	16(6.7)
High school diploma or lower	182(76.5)
Higher education	40(16.8)

Table 3. The frequency of head and facial traumas in patients referring from forensic medical centers to ear, nose and throat clinics of Babol public hospitals in 2013

Type of damage	N(%)
Malingering	73(30.7)
Ear injuries	57(23.9)
Malingering of ear injuries	43(18.1)
Malingering, edema and ecchymosis of the nose	27(11.3)
Skull and temporal bone fractures	26(10.9)
Broken nose, edema and ecchymosis of the nose	20(8.4)
Broken nose, edema, ecchymosis of the nose and periorbital ecchymosis	14(5.9)
Edema and ecchymosis of the nose	10(4.2)
Edema and periorbital ecchymosis	8(3.4)
Ear damage, edema and ecchymosis of the nose	6(2.5)
Broken nose, edema and periorbital ecchymosis	5(2.1)
Ear damage, edema, ecchymosis of the nose and periorbital ecchymosis	3(1.2)
Ear damage and broken nose	20(0.8)
Malingering of ear damage and broken nose	2(0.8)
Edema and periorbital ecchymosis	1(0.4)
Ear damage, edema and periorbital ecchymosis	10(0.4)
Petrous bone injury and broken nose	1(0.4)

Table 4. The frequency of different types of damages to the ears of patients referring from forensic centers to ear, nose, and throat clinics, affiliated to Babol public hospitals in 2013

Type of damage	N(%)
Traumatic rupture of the tympanic membrane	56(23.5)
Malingering	45(18.9)
Hearing loss	32(13.4)
Auricular trauma	6(2.5)
Nose bleeding	3(1.2)
Tearing of the auricle	3(1.2)
Auricular scratch	3(1.2)
Tinnitus	2(0.8)
Swelling of the auricle	2(0.8)
Wounds at the opening of the ear canal	2(0.8)
Ossicular chain dislocation	1(0.4)
Bruising of the auricle	1(0.4)
Hematoma of the earlobe	1(0.4)
Auricular hematoma	1(0.4)
Auricular chondritis	1(0.4)
Auricular swelling	1(0.4)
Hematoma behind the eardrum	1(0.4)
Acoustic trauma	1(0.4)
Complete hearing loss	1(0.4)

Subjects may have multiple injuries. Here, the number of injuries has been presented.

Discussion

In this study, the majority of participants referring from forensic medical centers were within the age range of 18-44 years. The majority of participants were male. Cases with high school diploma or lower constituted the majority of patients, whereas illiterate patients were the minority. The majority of patients were self-employed, students, employees and housewives, respectively.

Dispute and assault were the most common causes of accidents in most patients, followed by vehicle accidents. Ear damage was the most common ear, nose and throat injury in patients referring from forensic medical centers. Also, the majority of individuals were referred from forensic centers due to dispute and assault. These findings were in accordance with the results reported by Afzali et al. in Hamadan, Iran (1). In a study by Kiani et al., most participants were self-employed

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(3); this finding was in consistence with our study. This can be due to the high prevalence of self-employment in our society. According to studies by Polson et al. and Abolhasani et al., trauma was more prevalent among men than women, which was consistent with our study findings (9, 10). This can be related to the higher participation of men in society, compared to women. In a study by Ranngraz et al., in terms of educational level, the majority of assaults were reported in individuals with basic knowledge (i.e., literate subjects) (11), while in our study, the majority of cases had high school diplomas or lower and illiterate people constituted the minority; this may be due to the increasing level of education and decreased illiteracy.

In a study by Sanaeezadeh et al., the highest rate of mortality caused by car accidents was reported in patients, aged 21-30 years (12). Moreover, in a study by Seleye-Fubara et al. in Nigeria, the highest mortality rate due to car accidents was reported in the age range of 16-20 years (13). Additionally, in a study in Thailand, 70% of deaths due to car accidents were seen in patients aged 10-39 years (14). Studies have shown that different types of trauma in both alive and dead cases occur in the age range of 20-30 years (15). In the present study, the majority of patients were 18 to 44 years of age. This can be justified by the young age, high sensitivity, energy and pride of the youths. In a previous study, broken nose was the most common type of broken bone in the face (16). However, in our study, the most common type of damage to the ears, nose, and throat in patients referring from forensic medical centers was ear damage, followed by nose injuries. In 1981, in a study by Austen et al., rate of malingering was reported to be 10-50% in those seeking compensation due to hearing damages (17). Moreover, in our study, the majority of ear damages due to assaults were related to the left ear. This can be justified by the fact that most people are right-handed in our country. According to the results of this study, the highest incidence of trauma was reported in young individuals because of dispute and assault. Therefore, the dispute and assault are decreased in youths by preventing the effective agents. On the other hand, we can reduce the number of accidents by promoting traffic safety culture and public education since childhood

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