Femoral shaft fractures in all ages. An epidemiological study in Al- Najaf

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الخـــلاصة

الهدف من هذه الدراسة هو تسليط الضوء على مشكلة صحيحة مهمة ومعرفة حجمها وأسبابها و البحث عن الوسائل الناجعة من اجل تقليل حدوثها. أجريت هذه الدراسة على المرضى الذين ادخلوا إلى مستشفى الصدر التعليمي في النجف للفترة من كانون الثاني 1999 إلى كانون الثاني 2002 و كان جميعهم يعانون من كسر عظم الفخذ . كان عدد المرضى 494 مريضا و كان عدد الذكور 351 و عدد الإناث 143 وكانت نسبة الذكور إلى الإناث 1: 2.4 . تراوحت أعمار المرضى بين يومان و واحد و ثمانون سنة و كان معدل عمر المريض 18 سنة , كان معدل المكوث في المستشفى هو تسعة أيام .

أثبتت الدراسة إن الأسباب الرئيسية لهذا الكسر هي حوادث الطرق 44% , السقوط من علو 25% و السقوط 23%. كانت نسبة حدوث الكسر في الأطفال من عمر 0-15 سنة هو 26.5 لكل 100.000 طفل لكل سنة. كانت نسبة المرضى الذين يعانون من كسور متعددة و إصابات أخرى هو 13% وكان نسبة كبيرة منهم من الأطفال وكان السبب الرئيسي للإصابات هو حوادث الطرق خلصت الدراسة إلى إن الأطفال كانوا هم الضحايا الأكثر عددا و إن حوادث الطرق كانت سبب مهما خصوصا بالإصابات الخطيرة, و نتيجة لذلك لابد من اتخاذ تدابير وقائية لتقليل نسبة حدوث مثل هذه الإصابات و خصوصا بين الأطفال

ABSTRACT

The aim of this paper is to discuss an important fracture, its incidence and causes and to find the effective measures to decrease its occurrence. Material and method: between Jan.1999 and Jan.2002 all patient with fracture shaft of femur who were admitted to alsader teaching hospital in AL-Najaf were investigated for age, sex, cause of the fracture, and period of hospitalisation. Results: The number of the patients was 494.There were 351 male and 143 female. Male to female ratio was 2.4:1.The age was ranging from 2 days to 81 years with mean of 18 years. The mean . hospitalisation period was 9 days. The main three causes of the fractures were road accident (44%), fall from height (25%), and fall (23%). There was no seasonal variation. The incidence of the fracture in children aged 0-15 years was 26.5 per 100.000 child per year. Patients with multiple fractures and other associated injuries represent 13% and most of them were children and the main cause was road accidents. Conclusions: Children were the main victims and road accidents were important cause especially in the most serious injuries. Further

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preventive measures are needed to decrease the incidence of the fracture especially among children.

INTRODUCTION

Trauma is the commonest cause of death in people under 40. (1,2) In the United States 5.6 million fracture occurring annually. (3)

Fracture shaft of femur is one of the most common fractures affecting young adults. (4,5,6,7,8) The fracture usually results from directly applied high energy force. (9,10,11) It has significant impact on the patient ultimate functional outcome. (9,11) It results in high direct and indirect medical coast compared to other childhood fractures. (4,8)

Depending on these facts and to study this problem in details in our community I decided to write this paper. There was no paper at least in ALNajaf, which consider this problem. Knowing the bulk of this problem and its causes may help us to find the measures, which decrease the incidence of its occurrence.

MATERIAL AND METHOD:

Between January 1999 and January 2002,494patients with fracture shaft of femur were admitted to the orthopaedic and fractures wards in alsader teaching hospital in AL-Najaf.Data about the patient were taken from the hospital documents. It included the following: Name, Age, Sex, Date of admission, Date of discharge, Cause of the fracture, Side, Associated injuries and type of management. Statistics regarding population of Alnajaf were taken from specific references. [12]

The results were arranged in tables and analysis of these results was made and discussed.

RESULTS:

The total number of the patients in three years was 494,including 351male(71%) and 143 female (29%). The male to female ratio was2.4: 1

The age of the patient ranging from 2 days to 81 years, the mean was 18 yeares.262patient had right femur fracture and 237 had left femur fracture were 5 patients had bilateral fractures.263 patient treated operatively and 231 patient treated conservativly. The mean period of hospitalisation was 9 days.

Table (1) shows the rate of occurrence of the fracture in relation to months. Table (2) shows the number of the patients in relation to the age groups. The largest group was that of children aged 0-10 years and it included 268 child that constitutes about 54% of the number of the patients. Table (3) shows the causes of the fractures and the number of

the patients. It shows that road accidents were responsible for 217 case (44%), fall from height responsible for 123 case (25%), and fall responsible for 115 case (23%). Table (4) shows the main causes of the fractures in the group of patients aged 0-15 years.

According to Table (2) the total number of patients aged 0-15 was 294, and depending on references dealing with number of population , the incidence of fracture shaft of femure in this specific age group(0-15) was 26.5 per 100.000 child per year.

The group of patients with multiple fractures and other associated injuries include 64 patients representing13% of the whole number of the patients.

This group includes 43 child aged 0-15 years who they constitute 67% of the multiple injured patients. The main causes were road accidents in 79.5%, fall from height in15.5%, and fall in 5%.

The fractures and dislocations include: 17-tibia farcture, 7-pelvis fracture, 7-hip dislocation, 5-femur fracture, 3-Potts fracture, 2-shoulder dislocation, 2-humerus fracture, 2-clavicle fracture, 2-supracondylar fracture, 2-radius fracture, 2-ulna fracture, 2-foot fracture, 2-scapula fracture, and one dorsal spine fracture. The other associated injuries include 20 head injuries, 5 abdominal injuries, 5 fasciomaxillary injuries, 4 chest injuries and 4 vaginal and urethral injuries.

DISCUSSION:

Fractures of femoral shaft are sever injuries that require emergent orthopaedic treatment. [10] By comparing with the rate of occurrence of other fractures that needed hospitalisation, it was found that fracture shaft of femur was the commonest. [13] The burden of this fracture on the patient and on the community is obvious when we find that the mean hospitalization time was 9 days in comparison to 7 days for all fractures of upper and lower limbs. [13] The restriction of activity and yet the delay in return to daily activity is more than with other fractures.[14]

In this study the male to female ratio was 2.4:1.The explanation is that males involve in more active jobs, sports and sustained more accidents specially road traffic accidents. Some figures from other countries are comparable with these figures where the ratio was 2.8:1and 2.5:1 in Denmark and Finland respectively. [8,15]

The fact that fracture shaft of femur is fracture of children and a young adult is reflected in this study where the mean age of the patients was 18 years. Table (1) shows that 54%of the patients are children below 10 years and about 80%of the total patients are adults below30 years of age.

The main causes of the fracture were traffic accidents (44%), fall from height (25%), and falls (23%). There was no seasonal variation where 50.6% of the fractures occurred during summer months and 49.4% occurred during winter months. (Table 2). Study from Denmark showed that the incidence peak was in summer months .[16]

The patients with multiple fractures and associated injuries represent 13% of the cases. The main cause was road traffic accident (80%) and children were the main victims in this group (67%). Road traffic accidents in general constitute major public health problem all over the world .[6,7] It is always associated with the most serious injuries. [17]

In the industrial world road accident alone claim 1 in 10.000 lives each year, limb injuries are the commonest, head and visceral injuries the most lethal.[2]

Fracture shaft of femur in children.Fracture shaft of femur in children is common. (4,5,6,7)

In AL-Najaf the incidence in children aged 0-15 years was 26.5 per 100.000 per year. [12] The main causes were road accidents 38%, fall from hight33%, and fall23%. Table (4). In other countries the incidence in children was 19,21.6,and 28 per 100.000 per year in U.S.A, Finland, and Denmark respectively.[4,8,15] Again the main causes of the fracture were road accidents and fall including fall from height .[4,6,8,15].Most patient with multiple fractures and associated injuries were included in this group (67%), and road accidents were responsible for most of these cases .The commonest associated injury was head injury as seen in the results. Study from New Zealand showed that the combination of head and lower limb injuries was seen in 53% of the patients .[18]

I think that ignorance and carelessness of the family to the child is important cause to increase the rate of occurrence of this fracture. The community in general is also responsible. More care about the safety standards of the vehicle, improving the standards of giving driving licenses for drivers, prohibiting teenager from using vehicles, improving the quality of the roads and the sidewalks, and providing safe and open regions for safe playing for our children, all these measures will help to decrease the incidence of this fracture and other fractures.

The problem of child safety and the preventive measures need to be more stressed.

CONCLUSIONS:

Fracture shaft of femur is common fracture, which needs hospitalisation in children and young adults. The main causes are road accidents and falls including fall from height.The resource consumption of femoral shaft fracture is very high compared to other childhood fractures.The Iraqi public must be educated in preventive medicine and safety to decrease the senseless morbidity of our greatest resource.

Table (1): Number of the patients in relation to the months

Month	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
No.	33	44	40	56	39	39	36	22	54	56	40	35	494
%	6.68	8.91	8.09	11.34	7.89	7.89	7.28	4.45	10.93	11.34	8.09	7.08	100%

Table (2): Patients and age groups.

Age group	0-10	11-15	16-20	21-30	31-40	41-50	51-60	61-70	71-up	Total
No.	268	26	34	71	26	19	23	17	10	494
%	54.25	5.26	6.88	14.37	5.26	3.84	4.65	3.44	2.02	100%

Table (3): Causes of the fractures

Causes	Road accident	Fall from height	Fall	Direct trauma	Bullet	Football	Birth injury
No.	217	123	115	16	11	7	5
%	43.93	24.90	23.28	3.24	2.23	1.41	1.01

Table (4): Main causes of the fractures in 0-15 years old children

Causes	Road accident	Fall from height	Fall	Others	Total
No.	112	99	67	16	294
%	38.09	33.67	22.78	5.44	100

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