

TO ASSESS THE EPIDEMIOLOGY OF FRACTURE SHAFT OF FEMUR IN CHILDREN AGE MORE THAN 3 YEARS AND LESS THAN 13 YEARS

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Abstract:

Introduction: Femoral shaft fractures account for 1.6% of all pediatric bony injuries. Spica casting remains the most popular accepted method for treatment of femoral shaft fracture in infants and toddlers. AIMS and Objectives: To assess the epidemiology of fracture shaft of femur in children age more than 3 year and less than 13 year.

Methodology : This is institutional based prospective study of 60 patients, aged 3 to 13 years, with fracture shaft of the femur were treated with retrograde flexible intramedullary (titanium elastic) nailing at Dr. Shankarrao Chavan Govt. Medical College Vishnupuri, Nanded. Statistical analysis was done by chi-square test.

Result: Children and adolescents aged between 3 to 13 years were included in the study. 31 (52%) of patients were between 3-6 years, 20 (33.3%) were between 7 to 10 years and 9 (15%) were between 11 to 13 years age group with the average age being 7.08 years. 34 (57%) of the patients were boys and 26 (43%) were girls. RTA was the most common mode of injury accounting for 33 (55%) cases followed by self fall 8 (24%) and fall from height 1 (5%) Transverse fractures accounted for 30(50%) cases, oblique fractures 15 (25%) and spiral fractures 15 (25%). Fractures involving the middle 1/3rd.

Conclusion : The main conclusion of this study is fracture shaft femur is most common in 3 to 6 years of age group with right sided most commonly affected, and road traffic accident most common cause.

Keyword : Clinico-Epidemiological Study, Femur Fracture, children

Introduction :

Femoral shaft fractures account for 1.6% of all pediatric bony injuries. There is little controversy over the treatment of adult femoral shaft fractures with intramedullary nail fixation. Similarly, there is little controversy over the treatment of infants and toddlers with femoral shaft fractures by using spica casting.^{2,6} but the treatment of pediatric and adolescent (age 3 to 13 years) femur fractures remains controversial. Differences of opinion about treatment are greatest for patients who are too old for

early spica casting and yet too young for adult type of treatment with a reamed rod³. Current treatment options include early spica casting, traction, external fixation, ORIF with plating, flexible intramedullary nails and reamed intramedullary rods.^{4,5}

Methodology : ^{7,8,9,10}

This is institutional based prospective study of 60 patients, aged 3 to 13 years, with fracture shaft of the femur were treated with retrograde flexible intramedullary

(titanium elastic) nailing at Dr. Shankarrao Chavan Got. Medical College Vishnupuri, Nanded. Statistical analysis done by chi-square test. Inclusion criteria's were

1. Children and adolescent patients between 3 to 13 years of age
2. Mono-trauma / poly trauma.
3. Medically fit for surgery
4. <2 weeks post fracture.
5. Closed fractures

Result :

Table No. 1
Age Incidence

Sr. No.	Age in year	No. of cases	Percentage
1	3 to 6	31	52%
2	7 to 10	20	33%
3	11 to 13	9	15%
4	Total	60	100%

Majority of the patients i.e. 31 (52%) were in the age group of 3-6 years, followed by 20 (33%) patients in 7 to 10 years. The youngest patients were 3 years old and patient was 13 year.

Table No. 2
Sex Incidence

Sr. No.	sex	No. of cases	Percentage
1	Male	34	57%
2	Female	26	43%

Majority of the patients were male i.e. 34 (57%)

Table No. 3
side Affected

Sr. No.	Side affected	No. of cases	Percentage
1	Left	28	47%
2	Right	31	46%
3	Bilateral	1	7%

Left femur was involved in 28 (47%) patients and right femur in 31 (52%) patients. 1 patients had bilateral femur fracture.

Table No. 4
Nature of Trauma

Sr. No.	Trauma	No. of cases	Percentage
1	RTA	33	55%
2	Fall while playing	24	40%
3	Fall from height	3	5%

The major cause of fracture in our study was TRA in 33 (55%) patients and fall in 24 (40%) patients.

Table No. 5
Type of Fracture

Sr. No.	Type of Fracture	No. of cases	Percentage
1	Closed	60	100%
2	Open	0	0%

All fractures was closed fractures.

Table No. 6
Level of the fracture

Sr. No.	Level of the fracture	No. of cases	Percentage
1	Proximal	10	17%
2	Middle	41	68%
3	Distal	9	15%

In the present series 37 (62%) were transverse fractures, 15 (25%) were spiral fracture and 8 (13%) were oblique fractures.

Discussion:

Age incidence:

In the present study 31(52%) of the patients were 7-10 years, 20 (33.3%) were 9 to 12 years and 9 (15%) were 11 to 13 years age group with the average age being 8.4 years.

Sex incidence:

There were 34 (57%) girls and 26 (43%) boys in the present study. The sex incidence is comparable to other studies in the literature.

Mode of injury:

In the present study RTA was the most common mode of injury accounting for 33 (55%) cases, self fall accounted for 24 (40%) cases and fall from height accounted for 3 (5%) of the cases.

Type of fracture:

Most of the femoral fractures in children injuries. In our study 60 (100%) were closed fractures.

Level of Fracture:

Fractures involving the middle 1/3rd accounted for 41 (68%) cases, proximal 1/3rd 10 (17%) and distal 1/3rd 9 (15%) of cases in our study.

Pattern of Fracture:

In our study, transverse fractures accounted for 30 (50%) cases, oblique fractures 15(25%), spiral fractures 15(25%) and there were no segmental fractures.

Side effected :

In this study right side femur was affected in 31 (52%) patients, left side was involved in 28 (47%) patients and in one case bilateral femur was involved.

Associated injuries:

In this study 25 patients had associated injuries. Head injury was seen in 8 patients. 4 patients had tibia fractures of which one was compound. Blunt trauma to chest and abdomen was seen in 3 patients each. Radius radius ulna fracture was seen in 3 patients. Pelvis injuries were seen in patients and 2 patients had associated fracture humerus on same side.

Conclusion :

Children and adolescents aged between 3 to 13 years were

included in the study. 31(52%) of patients were between 3-6 years, 20(33.3%) were between 7 to 10 years and 9(15%) were between 11 to 13 years age group with the average age being 7.08 years. 34(57%) of the patients were boys and 26(43%) were girls. RTA was the most common mode of injury accounting for 33 (55%) cases followed by self fall 8 (24%) and fall from height 1(5%) Transverse fractures accounted for 30(50%) cases, oblique fractures 15(25%) and spiral fractures 15(25%). Fractures involving the middle 1/3rd.

The main conclusion of this study is fracture shaft femur is most common in 3 to 6 years of age group with right sided most commonly affected, and road traffic accident most common cause.

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