

Management of Traumatic Hip Dislocations in Irrua

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Abstract: *BACKGROUND: The hip joint is an inherently stable joint; hence a great force is required to produce a traumatic dislocation. Associated injuries occasionally results following this. 90% of hip dislocations are posterior and quite often result from road traffic accidents. Thompson and Epstein grade 1 and 2 are known to be the commonest variety of posterior hip dislocation. METHOD: This is a retrospective study of all cases of traumatic hip dislocations seen at Irrua specialist teaching hospital Irrua, Edo state, South-South Nigeria, between 1st January 2008 and Dec 31 2012. Medical records of the patients were obtained and the relevant data analyzed. RESULTS: A total of 24 patients were seen and treated during the study period. There were 23(87.5%) males and 1(12.5%) female, giving a male to female ratio of 7:1. Median age was 33yrs. Posterior hip dislocation was seen in 70.83% of cases. Thompson and Epstein 1 and II were seen in 76.47%. All but one case resulted from road traffic accident. Associated injuries were seen in 45.83% of cases, with acetabular rim fracture being the commonest. All but one presented in less than 6 hours from the incident. The commonest form of treatment was closed reduction in 87.5% of patients. CONCLUSION: Posterior hip dislocation, Thompson and Epstein grade 1 and II were the commonest variety and grades of posterior hip dislocation in our environment respectively. Late presentation is not a notable problem in our environment. Most were amenable to closed reduction.*

Keywords: Traumatic, hip, dislocation, management, Irrua

1. Introduction

Traumatic hip dislocation is a relatively uncommon injury because of the depth of the acetabular cavity and the strong support afforded the joint by its ligaments and muscles¹. In the hip joint, the femoral head articulates with the lunatic surface of the acetabulum. The position of the femoral head in relation to the acetabulum and the vector force at the time of impact determines the type of injury produced.²

It would however be expected that a force applied in the long axis of the femoral shaft may dislocate the head over the posterior hip of the acetabulum.

The exact incidence is difficult to determine and varies from institution to institution, depending on location and trauma designation.³

Posterior hip dislocations account for almost 90% of hip dislocations. Up to 70% of all hip dislocations are said to follow motor vehicle accidents.⁴

Athletic injuries, falls, and other causes are less common.⁵

The hip is an inherently stable joint and hence a dislocation would require a substantial force to occur. For this reason, associated injuries are common and their presence must be sought⁶. It is advocated that an early reduction will reduce complications.⁷

Such complications include avascular necrosis of the head of the femur, degenerative arthritis or ankylosis of the hip joint. Unfortunately, even with prompt reduction, these complications can still occur⁸.

Therefore it is an orthopaedic emergency and reduction must be done as early as possible.

The aim of this study was to evaluate the pattern of presentation, and management of traumatic hip dislocations as seen in a tertiary teaching hospital in South – south, Nigeria.

2. Materials and Methods

The study was carried out at Irrua Specialist Teaching Hospital, Irrua, Edo State, Nigeria. A retrospective review of the hospital's medical records was undertaken to identify cases of traumatic dislocation of the hip joint, seen and managed from January 1st, 2008 to December 31st, 2012.

Twenty – four patients were seen and treated. Case notes were retrieved and relevant data from these case notes extracted and analyzed with simple statistical method of percentages.

Demographic data, aetiology, types of dislocation, interval to presentation, previous treatment, type of treatment, type of reduction, and presence of neurological deficits before and after treatment, presence of associated injuries were all extracted.

Hip dislocations were classified according to the position of the femoral head in relation to the acetabulum. The posterior hip dislocation was classified according to the criteria of Thompson and Epstein².

3. Results

Twenty – four patients with hip dislocations were treated at the Irrua Specialist Teaching Hospital (ISTH) Irrua, Edo State, South – south, Nigeria during the five- year period under review. Twenty – one (87.5%) of these patients were males while three (12.5%) patients were females. Male to female ratio was 7:1. See Table II.

Median age was 33yrs (range 3yrs – 80yrs). Second and third decades of life constituted 63.50% of cases. See table II.

There were 23 (95.83%) patients with single joint dislocations while 1(4.17%) patient had bilateral hip dislocations, resulting in 25 dislocations.

Posterior hip dislocations were present in 70.83% of patients, while central dislocation accounted for 12.5% and anterior dislocation for 16.67%. See table III.

Right hip dislocations were slightly commoner than left hip dislocations occurring in 12(50% of cases) and 11(45.83% of cases) respectively. One patient (4.17% of case) had bilateral hip dislocations.

Majority of the posterior hip dislocations, were grades I and II, which accounted for 47.06% and 29.41% respectively. See table IV. Grade IV was seen in only one (5.88%) patient. See table IV.

All dislocations (95.83%) but one occurred as a result of road traffic accidents. The only (4.17%) exception was a patient who was knocked down by a collapsed mud house.

Isolated injuries (traumatic hip dislocations alone) were seen in 54.17 of cases, whereas associated injuries were seen in 45.83%. The commonest associated injury was fracture of the acetabular rim (50%). See table V. No case of sciatic nerve palsy was seen. Post treatment neurological deficit was seen in none of the patients.

Intervals to presentation was although variable; but were less than six hours in 95.83% of cases while only 1(4.17%) patient presented after 10hrs of injury.

None had any encounter with the traditional bone-setters before presentation to hospital. Two (8.33%) patients had general medical treatment without specific treatment for the hip dislocation. 91.67% of patients presented without prior intervention.

Twenty one (87.5%) patients were managed successfully in the theatre by closed manipulation under general anaesthesia. Following reduction, the patients were managed on continuous skin traction for a period varying from three – eight weeks. Three (12.5%) patients had open reduction following failed attempts at closed manipulations. One patient had a re-dislocation twelve days post successful closed manipulation while in the ward. Re-manipulation was done which was successful.

One patient died from associated traumatic brain injury. Ten patients (41.67%) discharged against medical advice at different times during post reduction care in the wards.

The follow up of the patients in this series was difficult because majority of them did not turn up after few visits at the out -patient’s clinic. One patient (4.17%) had osteonecrosis of head of femur after 3 months. Two patients (8.33%) had features suggestive of post traumatic osteoarthritis after 5 months.

Table 1: Classification of hip dislocation (Thompson and Epstein)

Types	Thompson and Epstein classification of hip dislocations
I	Dislocation with no more than minor chip fractures
II	Dislocation with single large fragment of posterior acetabular wall
III	Dislocation with comminuted fragments of posterior acetabular wall
IV	Dislocation with fracture through acetabular floor
V	Dislocation with fracture through acetabular

Table 2: Age & Sex Distribution of Patients

Age	Male		Sex		Female		Total	
	#	%	#	%	#	%	#	%
1 -10	1	4.17	0	0	1		1	4.17
11 - 20	1	4.17	0	0	1		1	4.17
21 – 30	7	29.17	1	4.12	8		8	33.33
31 - 40	6	25	1	4.12	7		7	29.17
41 – 50	3	12.50	1	4.12	4		4	16.67
51 - 60	1	4.17	0	0	1		1	4.17
61 - 70	1	4.17	0	0	1		1	4.17
71 – 80	1	4.17	0	0	1		1	4.17

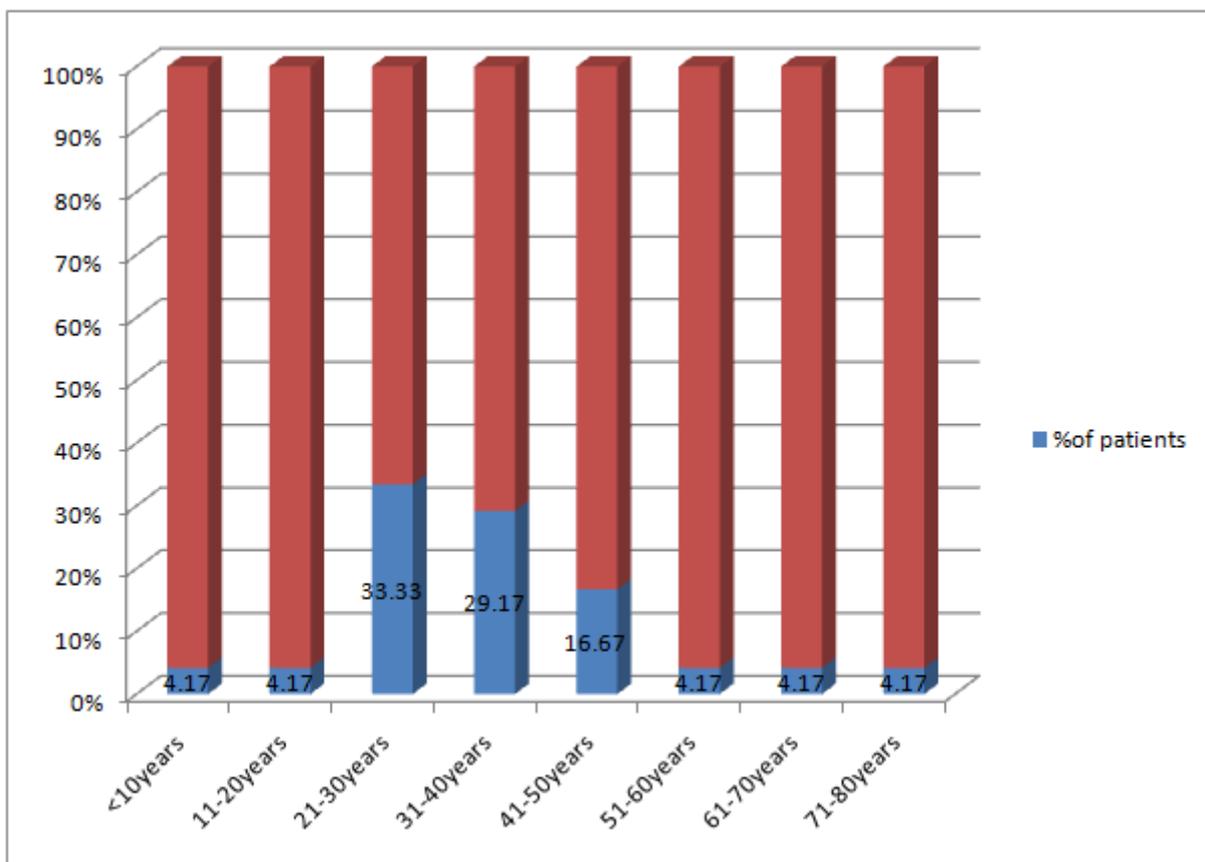
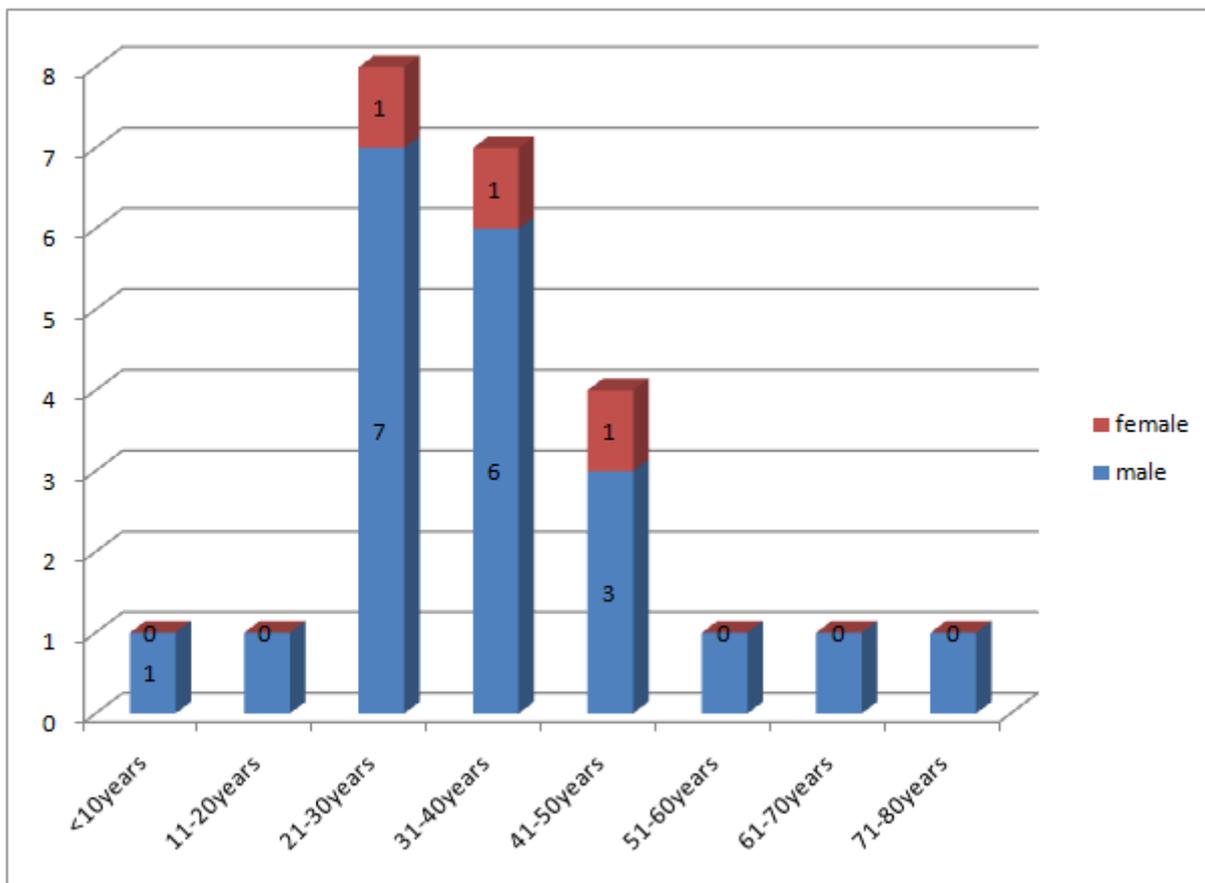


Table 3: Pattern of Dislocations

SIDE			ANTERIOR	POSTERIOR	CENTRAL
Right	Male	(n =9)	4	5	2
	Female	(n = 3)	0	2	1
Left	Male	(n = 10)	0	0	0
	Female	(n =1)	0	9	0
Bilateral	Male	(n =1)	0	1	0
	Female	(n =0)	0	0	0
Total			4 (16.67)	17 (70.83)	3(12.5)

PATTERN OF DISLOCATIONS

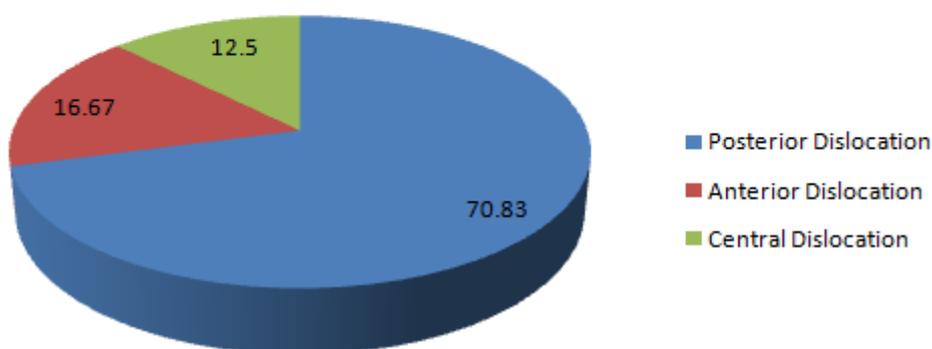


Table 4: Frequency of Posterior Hip Dislocations (Thompson and Epstein)

	#	%
Type I	8	47.06
Type II	5	29.41
Type III	3	17.65
Type IV	1	5.88
Type V	0	0

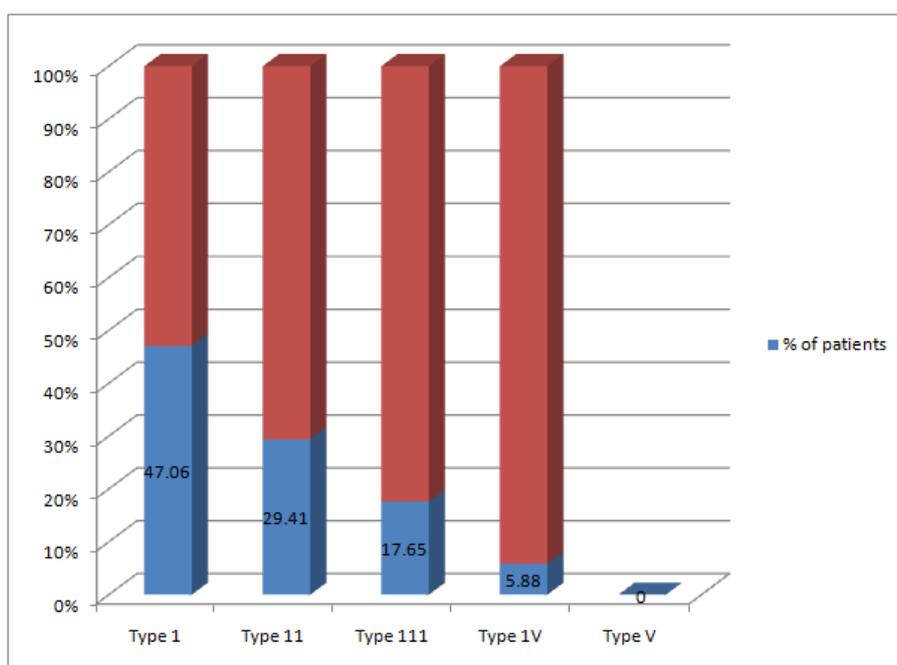
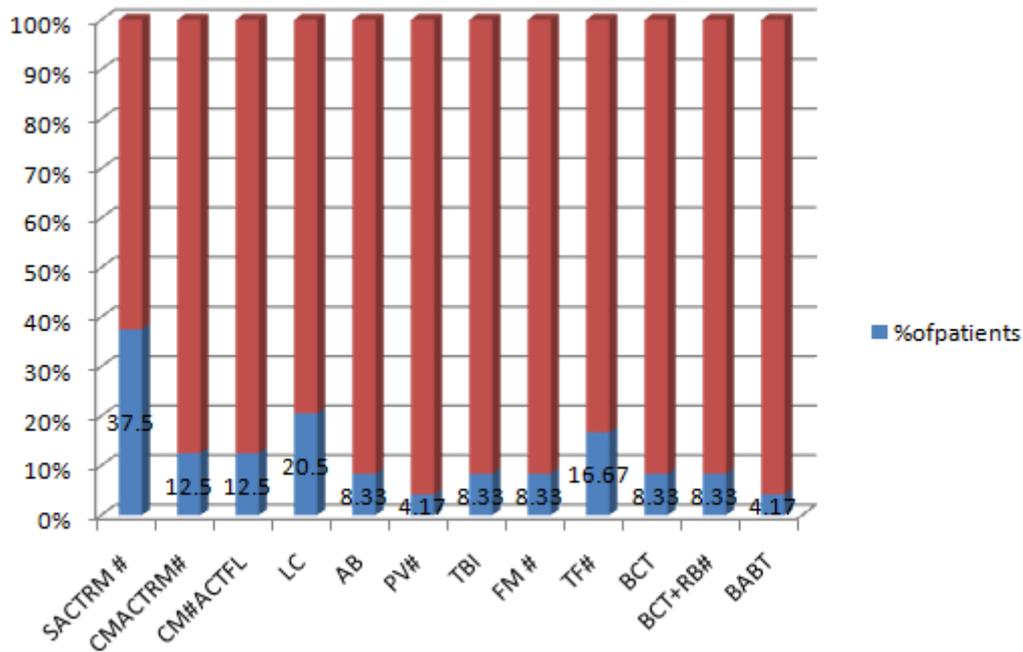


Table 5: Associated Injuries n = 11 (45. 83%)

Injuries	Percent
Single fracture of acetabular rim (9)	37.5
Comminuted fracture of acetabular rim (3)	12.5
Comminuted fracture of acetabular floor (3)	12.5
Lacerations (5)	20.83
Abrasions (2)	8.33
Pelvic fracture (1)	4.17
Traumatic Brain Injury (2)	8.33
Fracture of femur (2)	8.33
Tibia & fibular fracture (4)	16.67
Blunt chest trauma alone (2)	8.33
Blunt chest trauma with rib fractures(2)	8.33
Blunt abdominal trauma(1)	4.17



KEY

- SACTRM#=Single acetabular rim fractures
- CMACTRM#=Comminuted acetabular rim fractures
- CM#ACTFL#=Comminuted fractures of Acetabular floor
- LC=Lacerations
- AB=Abrasions
- PV#=Pelvic fractures
- TBI=Traumatic brain injury
- FM#=Femoral fractures
- TF#=Tibia and fibular fractures
- BCT=Blunt chest trauma
- BCT+RB#=Blunt Chest trauma+rib fractures
- BABT=Blunt Abdominal trauma



Posterior dislocation right hip (pre-reduction)



Posterior dislocation of the right hip (Post-reduction)

4. Discussion

In adults, late, unreduced traumatic posterior dislocation of the hip is usually the result of a motor - vehicular accident in which coma, fracture of the ipsilateral femur or tibia, dislocation or fracture of the contralateral hip masks the presence of a dislocation⁹. Hence there should be a high index of suspicion.

In this study, males were more commonly affected. This is not unexpected. They are the bread winners of their families, travelling and transporting goods and services across the country, making them more susceptible. Other authors have reported similar findings.

Majority of patients were in the second and third decades of life. This is not surprising as trauma, especially motor vehicle accident commonly affect young people in this age bracket. These are the most active and vulnerable age groups.

The commonest type of dislocation in our review was posterior, 70.83% of cases. This is in keeping with findings of other workers⁵. Anterior hip dislocation constituted 16.67% which was close to 12% recorded by Epstein⁵.

Hip dislocation was commoner on the right side. There is a disagreement in the literature regarding causative trauma and the side of hip dislocations. Levin et al¹⁰ reported that with left sided steering cars, the left hip was most vulnerable. Dreinhofer et al found no correlation with placement of the steering wheel.

Associated injuries were seen in 45.83% of cases. Considering the enormity of force required to cause this injury in a joint that is inherently stable, associated injuries occurring would not be a surprise. Hak and Goulet noted an associated injury incidence of 95% in their series¹². In Hak and Goulet series, 45% of the patients (who had road

traffic accident leading on to the posterior hip dislocation) were restrained with seat belt, hence, higher force were probably involved in the mechanism of injury and thus account for the higher incidence of associated injury in their series. In our environment, seat belts are still hardly worn by motorists despite the intervention/attempts at raising awareness by members of road safety corps, and thus a relatively lower force generated following road traffic accidents may lead to hip dislocation with a relatively lower associated injuries. Most authors have found associated injuries to be common and to result from motor vehicular accident.^{5,12}

95.83% of cases resulted from road traffic accident. Pietrasal,¹³ reported 62- 93%, Alonge et al¹² reported 100%.

Injury to the sciatic nerve has been reported to occur in 10% of all hip dislocations,¹² however we found none in our study.

Majority of cases of posterior hip dislocations were grades I and II. Both constituted 76.47% of cases. Other authors reported similar findings.^{12, 14}

Open reduction was indicated in three patients. This was because attempts at close reduction failed, due to loose bodies or soft tissues trapped within the joint.

95% of the cases presented within 6hours. This appears rather unusual. Interestingly, that was our finding. Motorcycle constitutes the mainstay of transportation in our environment. Following the ban of motorcycles in Benin- city, which is the state capital, 80 kilometres from Irrua, this resulted in an upsurge of commercial motorcyclists in our environment so as to sustain their livelihood. There is a very close niche among the people. They demonstrate compassion by being there for themselves in times of need. Each time a vehicular accident occurs, these motor-cycle riders are easily available and handy. Their ability to navigate rough and difficult terrain is an added advantage. Within a very short while, following a road traffic accident, the patients are brought to the hospital speedily on these motor-cycles, and most of the time inappropriately.

Delay in reduction was present in one patient (4.12%) and this was due to late presentation. This delay can be avoided if the diagnosis was promptly made by the attending physician and reduction or referral made immediately.

Traumatic arthritis is a long term complication of hip dislocation,⁸ while osteonecrosis of the femoral head following isolated hip dislocation have been reported in 2% - 17% of injuries¹⁵. Only one (4.17%) patient was found to have osteonecrosis of the head of the femur, which is similar to the above finding. Early reduction due to the early presentation of the majority of patients may account for this. We could not follow up our patients beyond five months as majority did not turn up after wards. Perhaps we may have been able to detect more, if they had not dropped out of follow - up. This is because;

osteonecrosis of the femoral head can develop as late as two years after hip dislocation¹⁵. The early detection osteonecrosis is also difficult as facilities for this are scarce in our environment.

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