

Ipsilateral compound GR 2 femoral neck and shaft fracture in a 2 year old children- A case report

Karan Chopra^{1*}, Suman Dhar¹, Mangesh Panat², Pratik Israni³

^{1,3}Resident, ²Faculty, Department Of Orthopedics, Mahatma Gandhi Medical College, Aurangabad, Maharashtra, INDIA.

Email: drchoprakaran1990@gmail.com

Abstract

Introduction: Concomittant Ipsilateral Fractures of Neck And Shaft of femur are rare in children of age group 2 years. there are only 11 reported cases till now. These injuries occur in children due to high velocity trauma and there is no accepted method of treatment. **Case Report:** We had compound grade 2 mid shaft femur with bone loss and ipsilateral neck femur. After fixation it resulted in no limb length discrepancy and no varus deformity. we advocate operative stabilisation of femoral shaft fracture to reduce the risk of further displacement and simplify the fixation of femoral neck. The common complications we see have poor prognosis resulting in avascular necrosis, coxa vara and limb length discrepancy. But in our case report we had nothing of them despite of being compound grade 2 with bone loss. **Conclusion:** To Conclude, Case Of This Sort In Paediatric Age Group Are Rare, But If Managed Properly Gives A Satisfactory Outcome With Minimal Or Nil Complications.

Keywords: Femoral Neck Fractures, Ipsilateral Femoral Shaft Fractures, Paediatric Age Group.

*Address for Correspondence:

Dr Karan Chopra, Resident, Department of Orthopedics, Mahatma Gandhi Medical College, Aurangabad, Maharashtra, INDIA.

Email: drchoprakaran1990@gmail.com

Received Date: 16/08/2016 Revised Date: 12/09/2016 Accepted Date: 04/10/2016

Access this article online	
Quick Response Code:	Website: www.statperson.com
	Volume 6 Issue 4

INTRODUCTION

Concomittant ipsilateral femoral fractures of the neck and shaft femur are extremely rare in the children of age group of 2 years. There are only 11 reported cases of such form. These injuries occur due to high velocity trauma and have no universally accepted treatment. We report case of 2 year child with a compound 2 femur with bone loss with ipsilateral neck femur. our study showed that there are lot of complications in transepiphyseal and transcervical femoral neck fractures. the present study was performed after taking consent from the patients parents.

MATERIAL AND METHODS

A 2 year old girl was run over by a bike subsequently was brought to our casualty MGM hospital Aurangabad with swelling and deformity of left thigh region. patient had a 2cms wound over the lateral aspect of thigh. Immediately

patient was stabilised and the x-rays were taken ap and lateral view. radiographs revealed a cervicotrocentric fracture delbert type 3 in classification with a shaft femur fracture with a bone loss and 2 cms approx shortening present. Patient was taken in operative room within 6 hours after the initial work up and consents were taken. we performed the surgery by initial debridement and fixation of fracture. Initially fixation of femoral shaft was done with the help of two 2mm tens nail in d configuration of c. first lateral entry for the tens was taken after the entry with the help of a awl taking care of the physc. Then it was taken till the fracture site. Then in the similar fashion the medial tens nail was passed till the fracture site until the fracture was reduced manually and two tens nail were crossed till the lesser trochanter level. Then the fixation of neck femur was done with the help of two thick k wires. The wound on lateral see was closed with the help of tagging sutures. Dressing was done and postoperatively a/k slab was given with good coverage of broad spectrum antibiotics for 3 days were given. Sutures were removed at the day 15. a/k slab was continued for almost 6 weeks. at the end of 6 weeks child showed good evidence of union in neck femur and shaft femur. at the follow up after 8 weeks the percutaneous k wires and slab was removed. child was kept nil weight bearing till 3 months. at the end of 5 months x-rays showed good alignment and callus formation with no signs of avascular necrosis no residual varus deformity limb length discrepancy and signs of infection.



Figure 1: Preoperative x-ray



Figure 2: Casualty



Figure 3: Intraoperative Debridement

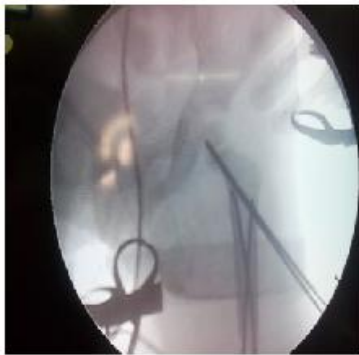


Figure 4: Intraoperative C Arm Images



Figure 5: Reduction Achieved



Figure 6: Post operative xray



Figure 7



Figure 8



Figure 9



Figure 10



Figure 11



Figure 12

DISCUSSION

Compound femoral shaft with bone loss with ipsilateral neck femur are extremely rare in 2 year old children. There are lotta injuries like this in adults. There are hardly 11 cases being reported like this and very few that have come with no complication as there is no definitive morality of treatment. femoral neck fractures are known for their sinister nature and potential complication especially avascular necrosis which poses most serious problem. It depends on various factors such as degree of displacement type of fracture and timing of surgery. upon reviewing all the 1 cases documented six of the femoral neck fractures were cervicotrochanteric delbert type 3 ao type 2 and one was transepiphyseal delbert type 1 ao type 1 and others were intertrochanteric. delbert type 4 ao type 3. Level of concomitant femoral shaft fracture was midshaft in 6 cases and distal third in one and proximal in remaining. all though its difficult to determine the

mechanism of trauma but it must be high energy impact trauma at fracture site. various modalities have been tried for these injuries. Operative, conservative, and combination of both. although good results have been reported with all of these treatments modalities. Although operative modalities have been advocated for preventing displacement and early mobilisation. in our case of compound grade 2 mid shaft femur with bone loss and neck femur we have fixed it in closed reduction with tens nail and two k wires after initial thorough debridement. a/k slab was applied for 6 weeks for providing additional stability. We recommend prior fixation of femoral shaft fracture to prevent stabilisation amd further reducing ipsilateral femoral neck fracture. in our case follow up there was no malalignment, no evidence of avascular necrosis, no limb length discrepancy no signs of infection.

REFERENCES

1. Agarwal A, Agarwal R, Meena DS. Ipsilateral femoral neck and shaft fracture in children. *J Trauma*. 2008;64(4):E47–E53. doi: 10.1097/01.ta.0000196696.87716.8c.
2. McDougall A. Fracture of the neck of femur in childhood. *J Bone Jt Surg Am*. 1967;49:16–29.
3. Fardon DF. Fracture of neck and shaft of the same femur. Report of a case in a child. *J Bone Jt Surg Am*. 1970;52:797–799.
4. Hoeksema HD, Olsen C, Rudy R. Fracture of femoral neck and shaft and repeated neck fracture in a child. Case report. *J Bone Jt Surg Am*. 1975;57:271–272.
5. Swiontkowski MF, Hansen ST, Kellam J. Ipsilateral fracture of the femoral neck and shaft. *J Bone Jt Surg Am*. 1984;66:260–268.
6. Canale ST. Hip fractures in children. *Curr Orthop*. 2000;14:108–113. doi: 10.1054/cur.2000.0091.
7. Bennett FS, Zinar DM, Kilgus DJ. Ipsilateral hip and femoral shaft fracture. *Clin Orthop Related Res*. 1993;296:168–177.
8. Hoekstra HJ, Binnendijk B. Fracture of the neck and shaft of same femur in children. A report of two cases. *Arch Orthop Trauma Surg*. 1982;100(3):197–198.
9. Akahane T, Fujioka F, Shiozawa R. A transepiphyseal fracture of the proximal femur combined with a fracture of the mid-shaft of ipsilateral femur in a child: a case report and literature review. *Arch Orthop Trauma Surg*. 2006;126(5):330–334.
10. Cannon SR, Pool CJF. Traumatic separation of proximal femoral epiphysis and fracture of the mid-shaft of the ipsilateral femur in a child: a case report and review of the literature. *Injury*. 1983;15:156.
11. Schwarz N, Moosmüller W. Simultaneous fracture of the femur shaft and femur neck in the children and adolescents. *Unfallchirurg*. 1986;89(6):268–271. Colonna PC. Fracture of the neck of the femur in children. *Am J Surg*. 1929;6:793–797.
12. Marsh JL, Slongo TF, Agel J, Broderick JS, Creevey W, DeCoster TA, Prokuski L, Sirkin MS, Ziran B, Henley B, Audigé L (2007) Fracture and dislocation classification compendium—2007: Orthopaedic Trauma Association Classification, Database and Outcomes Committee. *J Orthop Trauma* 21 (Suppl 10):S1–S163
13. Ratliff AH. Fractures of the neck of the femur in children. *J Bone Jt Surg Br*. 1962;44:528–542.
14. Morrissy RT. Hip fractures in children. *Clin Orthop Relat Res*. 1980;152:202–210.
15. Flynn JM, Wong KL, Yeh GL, Meyer JS, Davison RS. Displaced fractures of the hip in children. Management by early operation and immobilisation in a hip spica cast. *J Bone Jt Surg Br*. 2002;84:108–112.
16. Canale ST. Fractures of the hip in children and adolescents. *Orthop Clin North Am*. 1990;21:341–352.
17. Forlin E, Guille JT, Kumar SJ, Rhee KJ. Complications associated with fracture of the neck of the femur in children. *J Pediatr Orthop*. 1992;12:503–509. doi: 10.1097/01241398-199207000-00017.
18. Heiser JM, Oppenheim WL. Fractures of the hip in children: a review of forty cases. *Clin Orthop Relat Res*. 1980;149:177–184.
19. Leung PC, Lam SF. Long-term follow-up of children with femoral neck fractures. *J Bone Jt Surg Br*. 1986;68:537–540.
20. Hughes LO, Beatty JH (1994) Current concepts review: fracture of the head and neck of the femur in children. *J Bone Jt Surg Am* 76:283–292.
21. Swiontkowski MF, Winquist RA. Displaced hip fractures in children and adolescents. *J Trauma*. 1986;26:384–388. doi: 10.1097/00005373-198604000-00013.
22. Morsy HA. Complications of fractures of the neck of the femur in children. A long-term follow-up study. *Injury*. 2001;32:45–51. doi: 10.1016/S0020-1383(00)00109-1.
23. Moon ES, Mehlman CT. Risk factors for avascular necrosis after femoral neck fractures in children: 25 Cincinnati cases and meta-analysis of 360 cases. *J Orthop Trauma*. 2006;20:323–329.
24. Togrul B, Bayram H, Gulsen M, Kalaci A, Ozbarlas S. Fractures of the femoral neck in children: long-term follow-up in 62 hip fractures. *Injury*. 2005;36:123–130.

Source of Support: None Declared
Conflict of Interest: None Declared