CASE REPORT

A RARE CASE OF INTERTROCHANTERIC FRACTURE IN A 4 YEAR CHILD: CASE REPORT

Roshan Pais¹, Maruthi C.V¹

HOW TO CITE THIS ARTICLE:

Roshan Pais, Maruthi CV "A rare case of intertrochanteric fracture in a 4 year child: case report". Journal of Evolution of Medical and Dental Sciences 2013; Vol2, Issue 35, September 2; Page: 6600-6604.

ABSTRACT: INTRODUCTION: Intertrochanteric fractures are very rare in children, usually caused by fall while playing. The treatment of this condition ranges from closed reduction and hip spica application to open reduction and internal fixation with pediatric hip screw. Here we are presenting a case of intertrochanteric fracture in a 4 year child, managed with hip spica. **CASE DETAILS:** 4 years child came to the casualty department with history of fall and pain in the left hip, examination revealed tenderness over the greater trochanter. X ray and CT scan done to confirm the diagnosis of intertrochanteric fracture left hip. Patient treated with hip spica application and follow up done at 3 weeks, 6 weeks and one year. One year follow up showed minimal restriction of abduction and external rotation with slight reduction of neck shaft angle and negligible limb discrepancy. **CONCLUSION:** Intertrochanteric fractures are rare in children. Young children can be managed with hip spica application for six weeks, whatever may be the displacement of the fracture. If the child is old enough to walk with crutches or the child suffering from multiple injuries to be treated with open reduction and internal fixation with pediatric hip screw.

KEY WORDS: Hip spica, Intertrochanteric fracture, Neck shaft angle, Pediatric hip screw.

INTRODUCTION: Intertrochanteric fractures are very rare in children, usually caused by fall while playing. The treatment of this condition ranges from closed reduction and hip spica application to open reduction and internal fixation with pediatric hip screw. Here we are presenting a case of intertrochanteric fracture in a 4 year child, managed with hip spica.

CASE DETAILS: 4 years child came to the casualty department with a history of fall while playing complaining of left sided hip pain, swelling and inability to walk. Patient was brought to the casualty by his father. On examination vitals stable, tenderness, swelling and ecchymosis over greater trochanter of left hip. All the movements of left hip were restricted due to pain. Clinical diagnosis of left sided proximal femur fracture was made. X ray examination reveals left sided intertrochanteric fracture with query lytic lesion (Fig 1). CT scan was done to rule out pathological fracture. After confirmation of intertrochanteric fracture the patient was treated with hip spica application under anaesthesia (Fig 2), clinical and radiological follow up done at intervals of three weeks, six weeks and one year. At three weeks patient was pain free and hip spica continued. Six week follow up showed bony union thereby hip spica removed, range of motion of the hip and full weight bearing started. One year follow up revealed minimal restriction of abduction and external rotation in left hip, remaining movements are same as opposite side (table 1) and radiological evaluation showed the neck shaft angle to be within the normal limit with negligible limb length discrepancy (Table 2)(Fig 3&4).

CASE REPORT

Table 1: Range of movements at hip

	Right hip	Left hip
Flexion	140 ⁰	140 ⁰
Extension	15 ⁰	15 ⁰
Abduction	45 ⁰	40 ⁰
Adduction	40 ⁰	45 ⁰
External rotation	35 ⁰	30 ⁰
Internal rotation	35 ⁰	40 ⁰

Table 2:

	Right hip	Left hip
Neck shaft angle	135 ⁰	126 ⁰
Length of femur	26.96 cms	26.21 cms

DISCUSSION: Fractures of the proximal femur in paediatric age group constitutes less than 1 %¹. Usual mechanism of injury is fall while playing. Delbet classified the fracture neck femur in children in to four types. Type I is a trans epiphyseal separation, with (type IA) or without (type IB) dislocation of the femoral head from the acetabulum. Type II is a transcervical fracture. Type III is a cervico trochanteric fracture. Type IV is an intertrochanteric fracture². Intertrochanteric fractures constitute only 12% of the fractures of the proximal femur in children³. Closed reduction and hip spica application is the treatment of choice regardless of the displacement³. Only in children old enough to use the crutches or those with multiple injuries should be treated with open reduction and internal fixation with paediatric hip screw⁴. Coxa vara and premature physeal closure have been reported occasionally whereas non-union and osteonecrosis are rarely reported^{3, 5, and 6}. If the child is over 8 years of age, the neck shaft angle is 110 degrees or less, and coxa vara has been persistent for more than 2 years, subtrochanteric valgus osteotomy may be considered to restore limb length and abductor strength ³. The capital femoral physis contributes only 13% of the growth of the entire extremity and normally closes earlier than most of the other physes in the lower extremity. As a result, shortening due to premature physeal closure is not significant except in very young children³. Treatment for leg length discrepancy is indicated only for significant discrepancy (2.5 cm or more projected at maturity) ³.

CONCLUSION: Intertrochanteric fractures are rare in children. Young children can be managed with hip spica application for six weeks, whatever may be the displacement of the fracture. If the child is old enough to walk with crutches or the child suffering from multiple injuries to be treated with open reduction and internal fixation with pediatric hip screw.

REFERENCES:

1. Ratliff AHC. Fractures of the neck of the femur in children. J Bone Joint Surg [Br] 1962; 44:528-42.
2. Colonna PC. Fracture of the neck of the femur. J Bone Joint Surg [Am] 1976; 58:961-70.

CASE REPORT

3. Hughes LO, Beaty JH. Current concepts review: fractures of the head and neck of the femur in children. J Bone Joint Surg [Am] 1994;76:283-92
4. Rockwood and Wilkins'. Fractures and traumatic dislocations of the hip in children. Fractures in children. 2006; 6th edition, chapter 21: P872.
5. Lam SF. Fractures of the neck of the femur in children. J Bone Joint Surg [Am] 1971; 53:1165-79.
6. Canale ST, Bourland WL. Fracture of the neck and intertrochanteric region of the femur in children. J Bone Joint Surg [Am] 1977; 59:431-43.

Fig. 1

Fig. 2

CASE REPORT

Fig. 3

Fig. 4

CASE REPORT

AUTHORS:

1. Roshan Pais
2. Maruthi C.V.

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of Orthopaedics, M.V.J. Medical College and Research Hospital, Hoskote, Bangalore.
2. Assistant Professor, Department of Orthopaedics, M.V.J. Medical College and Research Hospital, Hoskote, Bangalore.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Maruthi C.V.,
6th Cross, Opp. APMC Yard,
Sir. M. V. Layout, M.G. Road,
Chickballapur - 562101.
Email- cvmaruthi@sify.com

Date of Submission: 19/08/2013.
Date of Peer Review: 19/08/2013.
Date of Acceptance: 20/08/2013.
Date of Publishing: 27/08/2013