NON UNION FRACTURE NECK OF FEMUR IN PAEDIATRIC AGE GROUP – A TREATMENT APPROACH
Dr. Amit Sharma, Dr. Lalit Maini
Maulana Azad Medical College and Lok Nayak Hospital

Case

- A 3 yrs old female child admitted in our hospital with complaints of pain in left hip and difficulty in walking for 4 months preceded by a incidence of a fall from 8 feet. H/O massaging from quack +. No h/o head injury. Patient’s systemic examination was WNL. On local examination, patient had a short limb and trendelenburg gait. No hip joint tenderness, no swelling Active SLR present bilaterally. Apparent and true shortening of 1 cm was present corroborating with supratrochanteric shortening. Telescopicwas present.

Radiological finding

- There was an evidence of # neck of femur Delbet type 3 on plain X-ray. Fracture line was sclerosed with smoothened out margeins thus confirming the diagnosis of non union neck of femur fracture

Treatment

- Valgus osteotomy was done which was stabilized using a K – wire and fracture was stabilized using 2 non-cannulated cancellous screws. Postoperatively child was kept on hip spica. Spica was removed after 10 weeks and patient mobilized. Patient remained asymptomatic with no restriction of activities for about 1 year postoperatively after which the implant was removed. Surgery done for implant removal was minimally invasive; the fact was substantiated by small size incision and less than 30 minutes of total surgical time. A hip spica was again applied for 6 wks to prevent any stress fracture. After spica removal, patient was gradually mobilized and allowed full weight bearing within next 4 weeks. At 2 year follow up, patient was asymptomatic with full range of motion at hip and with radiological evidence of union and restoration of neck shaft angle.

Discussion

- Pediatric femoral neck fracture is a very rare entity. In past, the incidence of pseudoarthrosis varies from 6 to 10% of all paediatric hip fractures. But, with the advent of early anatomical reduction, impaction of fractures and rigid internal fixation, the incidence of non union has been significantly reduced. Though very rare but still, non united femoral neck fractures are reported in developing countries because of mismanagement by bone setters and delayed referrals. Which surgery to opt and which implant to choose? Yet, not well defined. In recent years, the excellent results of valgus intertrochanteric osteotomy fixed with dynamic hip screw encouraged many authors. But, still the choice of fixation implant is debatable because DHS is a bulkier implant which increases the magnitude surgery especially if child is too young. For neglected cases internal fixation alone is likely to have high failure rate. Treatment of femoral neck non union in children by fibular grafting was tried. The fibular graft was used alone or with screw fixation. According to the authors they had a high success rate in management of these cases however this method could not deal with femoral neck non union with coxa vara or limb shortening except if accompanied with Inter-trochanteric valgus osteotomy. In a series of nine cases done by Pedro et al they got 100% union rate of their cases done by inter-trochanteric valgus osteotomy and plate fixation, they reported only one case of delayed consolidation but eventually healed.

Take Home Message

- For non union # neck femur in paediatric age group, valgus osteotomy is a very promising surgery. Only screws and K-wires can only be used (rather a bulkier implant like DHS) for stabilizing osteotomy and fracture site as it showed wonderful result of union and achievement of optimum neck shaft angle without compromising any epiphysial growth. Such implant not only easessout the second surgery of removal but also reduces the cost of implant being used in surgery.