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Case Report

Case report of bilateral hip arthritis secondary to failed SCFE treatment

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ABSTRACT

Slipped capital femoral epiphysis (SCFE) is a disorder of the adolescent hip. SCFE is characterized by disruption of the proximal femoral physis, leading to the femoral metaphysis displacing anteriorly and externally rotating in relation to the epiphysis. The morphological abnormality created by this condition predisposes the hip to femoroacetabular impingement (FAI) which may lead to increased contact stresses within the hip joint, joint degeneration and arthrosis at a relatively young age. We present a case of 25 years male with bilateral grade 4 hip arthritis with history of failed surgery for slipped capital femoral epiphysis. Treated with bilateral uncemented total hip arthroplasty.

At the end of 3 months patient was limp free, able to sit on chair comfortably, no difficulty in using stairs with an improvement of modified harris hip score from 35 to 97.

Good functional outcome is achieved in cases of neglected or failed SCFE presenting as a case of secondary hip arthritis. Total hip replacement is ideal method of treatment in such cases.

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1. Introduction

SCFE is defined as the posteroinferior relegation of the proximal femoral epiphysis on metaphysis through the epiphyseal growth plate. SCFE is classified into a stable and an unstable type grounded on the stability of the physis. An unstable SCFE is clinically determined when a child can not bear weight on the affected leg with or without support. It generally has a worse outcomes than a stable SCFE with a advanced rate of complications similar as avascular necrosis (AVN) of the femoral head. The AVN rate for stable SCFE has been reported to be as low as 0 as compared with unstable SCFE ranging between 14 and 50.¹ The dependence of treatment includes exertion and life style variations, anti inflammatory drugs and physiotherapy. When these measures doesn't show promising measures,

surgical intervention is generally indicated. It's estimated that 45% of SCFE cases will suffer a total hip arthroplasty (THA) within 50 years of 1st trauma.²

2. Case Report

2.1. Patient profile

1. Age-25 years
2. Sex –male
3. Occupation- farmer
4. Height-194 cm
5. Weight- 120kg

1. Presenting a case of 25 years male with complaints of pain in both hips and difficulty in walking for 6 years.
2. Patient started experiencing pain in right hip 6 years prior which gradually progressed and within six months both hips were involved.

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3. Patient developed difficulty in walking due to pain and had to rest intermittent to continue walking. Then he visited a private hospital where he was diagnosed with SCFE and closed reduction with screw fixation was done.
4. Implant removal was done within 6 months at the same setup.
5. Patient continued to have pain even after hardware removal and did not receive any treatment for next 6 years.
6. Patient is currently receiving treatment for endocrinopathy from private clinic.
7. Currently patient has difficulty in walking, walking up and down the stairs difficulty sitting on chair.
8. Unable to squat and sit cross legged.

2.2. Examination

1. Anterior joint line tenderness in both hips.
2. Gross restriction of range of motion in both hips with right hip 30 degrees of fixed flexion deformity.
3. Limb length discrepancy- 1cm.
4. Gait – waddling gait.



Fig. 1:

2.3. Surgical procedure

1. Surgery – Total Hip Arthroplasty
2. Position- lateral decubitus position
3. Approach – posterolateral approach

2.4. Procedure

1. In lateral decubitus position, under complete asepsis incision was taken through posterior approach subcutaneous soft tissue with fat is dissected along same plane.

2. Tensor fascia latae is cut and retracted, gluteus maximus is split with blunt dissection to expose short external rotators.
3. Short external rotators are tied, cut and reflected. Joint capsule is cut in inverted T shape. Joint was dislocated.
4. Once head and neck is visualised, marking was done over the neck to preserve at least 1 cm of calcar. Neck was resected using saw drill.
5. Adequate exposure of acetabulum was attained using multiple acetabular retractors. Acetabulum was reamed till all the sclerosed margins are cleared and bleeding points are observed.
6. Uncemented acetabular cup was inserted after trial in adequate anteversion followed by HMWPE liner placement.
7. Femoral canal is prepared, trial was done.
8. Uncemented femoral stem with metal head is inserted, joint relocated.
9. Short rotators are tied to the GT, drain placed and fascia is closed with continuous sutures. Skin closed in layers.

2.5. Findings

1. Collapsed and sclerosed femoral head
2. Completely sclerosed acetabular margins.

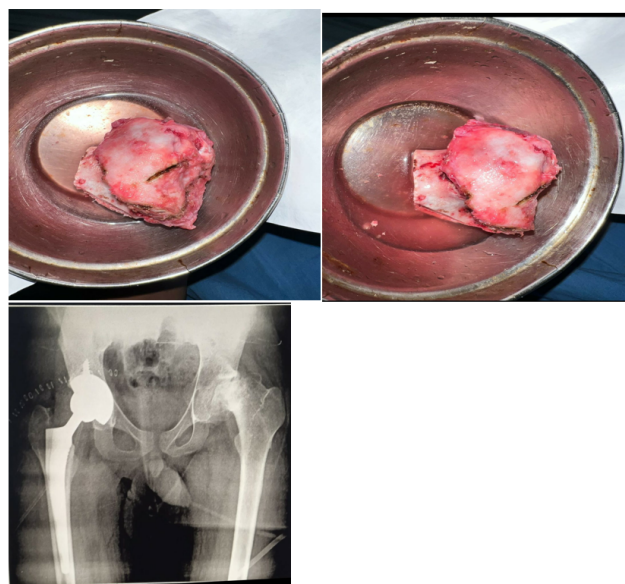


Fig. 2: Right sided femoral head

2.6. Follow up

1. 1st surgery was done for right side as patient had much complaints with right side.
2. After 2 wks 2nd surgery was done for left side

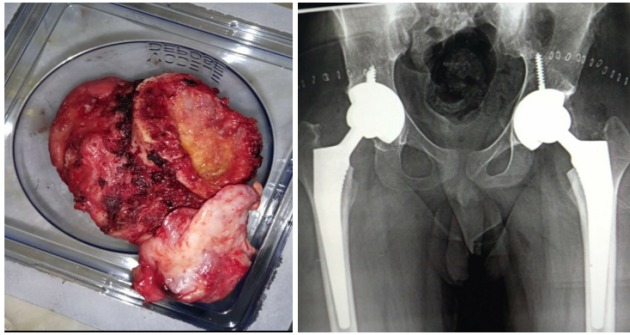


Fig. 3: Left sided femoral head

3. Patient was allowed full weight bearing from day 1 with support of walker.
4. Follow up was done at 6 wks, 3 months and 6 months.

3. Results

1. At the end of 3 months patient was limp free, able to sit on chair comfortably, no difficulty in using stairs.
2. Improvement in HARRIS HIP SCORE from 35 to 97.
3. Complete correction of limb length discrepancy.



Fig. 4: Flexion of bilateral hips more than 100 degrees

4. Discussion

Residual deformity of proximal femur after an initial treatment of SCFE causes poorer long-term outcome including pain, limitation of hip ROM, femoroacetabular impingement (FAI) and osteoarthritis.^{3,4}

Avascular necrosis of the femoral head (AVN) is the most serious complication of SCFE, observed nearly always after unstable slips (up to 47% of the cases). AVN may develop within some time after the slip. Hip pain and limp worsen with time. AVN generally affects the anterosuperior portion of the femoral head. Symptoms complicate with the collapse of the necrotic bone, after which rapid destruction of the joint is ineluctable.⁵

THA in this unique group of cases is technically grueling because of the abnormal deconstruction of anatomy and multi-planar abnormalities encountered in the proximal femur. Cases witnessing THA for degenerative common complaint secondary to SCFE are significantly younger than those who generally undergo THA for primary OA. It's generally accepted that the more severe the original slip, the sooner the onset of debilitating hip pain and need for arthroplasty surgery. This problem is compounded in cases who develop avascular necrosis of the femoral head.⁶

Boyle et al.⁷ in his study found that the average age of cases treated for THA following SCFE was 48.5 years, which was significantly earlier than those with primary OA, whose average age was 67.6 times. 7 In our case patient age was significantly lower i.e. 25 years.

Schoof et al.⁸ found that the mean leg length difference was set up to have reduced from an normal of 13.5 mm preoperatively to 4.5 mm post-operatively. In our case leg length discrepancy post-operatively was lower than that.

The Harris hipsterism score (HHS) enhanced by a mean of 41.3 points post-operatively is reported in multiple studies (34 to 59).⁹ In our case the enhancement was 60 points which significant with other studies.

Torchia et al.¹⁰ demonstrated a high failure rate of cemented THA in younger cases reaching 45 at 15 times postoperatively. TRAINA et al.¹¹ acknowledged use of uncemented prosthesis in 90 percent of their cases with good survival rate of implant and smaller complications. In our case uncemented prosthesis obsession with modular neck was used. Good short term outgrowth is observed.

5. Conclusion

We conclude that Uncemented Total Hip Arthroplasty is an ideal surgical option in young cases of osteoarthritis hip secondary to SCFE to provide better quality of life, relief from pain.

6. Source of Funding

None.

7. Conflict of Interest

None.

References

1. Sawamura K, Mishima K, Matsushita M, Kamiya Y, Kitoh H. Neglected Unstable Slipped Capital Femoral Epiphysis: A Case Report. *Acta Sci Orthop*. 2020;3(12):87–90.
2. Nelms NJ, Lewallen LW, McIntosh AL, Sierra RJ. Total hip arthroplasty in the young: special emphasis on post-SCFE patients. *J Pediatr Orthop*. 2013;33(Suppl 1):137–42.
3. Hansson G, Billing L, Högstedt B, Jerre R, Wallin J. Long-term results after nailing in situ of slipped upper femoral epiphysis: A 30-year follow-up of 59 hips. *J Bone Joint Surg Br*. 1998;80(1):70–7.
4. Jones CE, Cooper AP, Doucette J, Buchan LL, Wilson DR, Mulpur K, et al. Relationship between severity of deformity and impingement in slipped capital femoral epiphysis. *J Pediatr Orthop*. 2017;37(4):272–8.
5. Loder RT. What is the cause of avascular necrosis in unstable slipped capital femoral epiphysis and what can be done to lower the rate. *J Pediatr Orthop*. 2013;33(Suppl 1):S88–91.
6. Gent E, Clarke N. Joint replacement for sequelae of childhood hip disorders. *J Pediatr Orthop*. 2004;24(2):235–40.
7. Boyle MJ, Frampton CMA, Crawford HA. Early results of total hip arthroplasty in patients with slipped upper femoral epiphysis compared with patients with osteoarthritis. *J Arthroplasty*. 2012;27(6):1003–7.
8. Schoof B, Citak M, O'Loughlin PF, Kendoff D, Haasper C, Gehrke T, et al. Eleven year results of total hip arthroplasty in patients with secondary osteoarthritis due to slipped capital femoral epiphysis. *Open Orthop J*. 2013;7:158–62.
9. Sarraf KM, Popat R, Kneale KL, Bhattacharya R, Ramachandran M, Achan P, et al. Functional outcomes, complications and revision rate of hip arthroplasty in patients with sequelae of slipped capital femoral epiphysis: a systematic review. *EFORT Open Rev*. 2021;6(7):539–44.
10. Torchia ME, Klassen RA, Bianco AJ. Total hip arthroplasty with cement in patients less than twenty years old. Long-term results. *J Bone Joint Surg*. 1996;78:995–1003.
11. Traina F, DeFine M, Abati CN, Bordini B, Toni A. Outcomes of total hip replacement in patients with slipped capital femoral epiphysis. *Arch Orthop Trauma Surg*. 2012;132(8):1133–9.

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