

Case Report

Two Stage Revision Total Hip Arthroplasty; A Case Report

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Abstract:

Infected Total Hip Prosthesis is one of the most serious complication of total hip arthroplasty (THA) and can have serious consequences. Several techniques for treating infected THA, have been reported recently. These techniques include antibiotic suppression, debridement, and closed continuous irrigation without removing the prosthesis; one-stage cemented revision THA using antibiotic-impregnated cement; and two stage revision THA using either a cemented or a non-cemented component. We here report the management case of a infected total hip prosthesis in a obese 38yr male patient by two stage revision total hip arthroplasty, using an antibiotic impregnated cement spacer for the interval between first and second stages.

Key words:

Total hip arthroplasty (THA), Antitubercular therapy (ATT), Vacuum assisted closure (VAC).

Introduction

The Total Hip Arthroplasty is an effective method for the management of the osteoarthritis, rheumatoid arthritis of hip and fracture neck of femur in the elderly. Deep infection following total hip replacement is a challenging complication for both the patient and the surgeon. The reported risk of infection following arthroplasty varies from 0.3%, reported by the British Medical Research Council⁽¹⁾ to 2.2% in a large review by Sculco⁽²⁾. Although the percentages appear small, given that the number of hip replacements is increasing, it relates to a large number of patients with periprosthetic infections who utilize a substantial amount of health-care resources and the Swedish Hip Registry reports that 7.3% of revisions are carried out for infection⁽³⁾.

Tsukayama⁽⁴⁾ classified periprosthetic infections into four categories:

1. Early postoperative infection: onset within the first month after surgery
2. Late chronic infection: onset more than 1 month after surgery, insidious onset of symptoms
3. Acute hematogenous infection—onset more than 1 month after surgery, acute onset of

symptoms in previously well functioning prosthesis, distant source of infection

4. Positive intraoperative cultures: positive cultures obtained at the time of revision for supposedly aseptic conditions.

Case Report:

A 38yr male presented to Ortho OPD of Rajindra Hospital with chief complaint of Pus discharge from his left gluteal region since 4years.

Past History – Patient was apparently asymptomatic 8 years back, when he met an Road side accident, 2years after the incident patient started having pain in the left groin region. For this left groin pain the patient underwent Primary Total Hip Arthroplasty in December 2015.

Examination revealed the presence of the incisional scar on the left gluteal region, with frank pus discharge coming out from the previous incision site. Local examination the movements of the left hip were painful, a draining sinus was present at the local site. There was no signs of any neurovascular deficit in the limb, Right hip of the patient was normal.

Patient was thoroughly investigated, at the time of admission the TLC count was 10,500/cmm, haemoglobin was 9.8gm/dl and platelet count was within normal limits. The markers of infection i.e ESR was 105 mm/1st hour and CRP quantitative was 82mg/l. Pus culture that was sent for bacterial growth and sensitivity turned out to be negative for the growth of the pyogenic organisms. Xray pelvis with both hip joint were done for the patient which revealed the presence of uncemented total hip prosthesis on the left, with a high hip centre and signs suggestive of infection.

Patient was counselled and explained about his condition that he was having an infected hip prosthesis that needs to be removed surgically and antibiotic Impregnated cement needs to be placed for the adequate control of the infection and pus discharge, subsequent to the control of the infection the hip joints needs to be reconstructed again. Preoperative consent for Surgery and Preanaesthetic checkup and medical fitness were taken and patient was prepared for surgery. Patient underwent debridement, saline lavage, left hip prosthesis removal and placement of antibiotic cement spacer in the acetabulum and the antibiotic beads around the femoral stem. Intraoperative cultures were sent both from the femoral and acetabulum side for bacterial growth and histopathological examination prior to debridement and saline lavage. Post operatively patient were administered broad spectrum antibiotics as the cultures reports were awaited.

Patient was continued on InjVancomycin 1gm ivbd and Inj Linezolid 600 mg iv bd as the cultures came out to be negative for the bacterial growth and post discharge patient was given oral linezolid 600mg bd. Even after removal of the prosthesis and intravenous use of the antibiotics for 6 weeks, the discharge continued from the left gluteal region. Patient was then put on the therapeutic trail of antitubercular therapy consisting of isoniazid (5mg/kg), rifampicin (10mg/kg), ethambutol (20mg/kg), pyrazinamide (25mg/kg). The discharge decreased and after 2 months of the course of the antitubercular therapy, ESR and CRP levels came down to 10 mm/1st hour and 8mg/l and Patient was admitted for reconstruction of the hip joint and removal of the antibiotic cement. Patient underwent removal of the antibiotic spacer and revision total hip uncementedarthroplasty, the femoral stem which

cant be removed in the 1st surgery was also removed and replaced with a new femoral stem. Injection streptomycin diluted in distilled water were given at the local site in the acetabulum and the femoral area intra operatively.

Postoperatively ATT was continued, patient was mobilized next day with the help of the walker and active quadriceps exercises was advised. Local wound complications occurred there was gaping of the suture line and continued discharge from the middle part of the suture line, for this the local wound site was given a through wash and necrotic tissues were debrided and wound was left to heal with secondary intention. A Plastic surgery consultation was done and they advised VAC dressing for the healing of the wound. VAC dressing was applied for ten days and wound healed fully well by secondary intention and no signs of any active discharge. At the time of discharge of the patient the ESR value decreased and came to be in the normal range and CRP was negative.



PreopXray – infected THA



Preop – local site with sinus



Xray Pelvis with both hips showing antibiotic Beads and removal of acetabular component



Prior to the use of VAC



Usage of VAC for wound closure



Wound condition at discharge

Post Revision Total
Hip Arthroplasty

Post Revision Total Hip Arthroplasty

Discussion

An Infected THA is a serious complication of the orthopaedics surgery. The goals of the revision for such complications are control of infection and reconstruction of the THA to achieve a stable and a long term outcome. Control of the infection is particularly important for the restoration of the function. Numerous studies^(5,6,7) of two stage hip revision have demonstrated over 90% efficacy in eradication of infection and as a result this treatment is considered to be the gold standard . The use of antibiotic-loaded cement at revision has been shown to reduce the rates of reinfection. Gentamicin-loaded cement was associated with eradication in 95% of patients at five years in one study⁽⁸⁾.

References-

1. Lidwell OM. Clean air at operation and subsequent sepsis in the joint. ClinOrthop 1986;211:91-102.
2. Sculco TP. The economic impact of infected total joint arthroplasty. Instr Course Lect 1993;42:349-51.
3. Swedish National Arthroplasty Register, Annual Report 2006 – full report accessed at <http://www.jru.orthop.gu.se/>
4. Tsukayama DT, Estrada R, Gustilo RB. Infection after total hip arthroplasty: a study of the treatment of one hundred and six infections. J Bone Joint Surg Am 1996;78-A:512-23.
5. Younger AS, Duncan CP, Masri BA, et al. The outcome of two-stage arthroplasty using a custom made interval spacer to treat the infected hip. J Arthroplasty 1997;12:615-23.
6. Etienne G, Waldman B, Rajadhyaksha AD, Ragland PS, Mont MA. Use of a functional temporary prosthesis in a two-stage approach to infection at the site of a total hip arthroplasty. J Bone Joint Surg [Am] 2003;85(Suppl 4):94-6.
7. Durbhakula SM, Czajka J, Fuchs MD, Uhl RL. Spacer endoprosthesis for the treatment of infected total hip arthroplasty. J Arthroplasty 2004;19:760-7.
8. Garvin KL, Evans BG, Salvati EA, Brause BD. Palacos gentamicin for the treatment of deep periprosthetic hip infections. ClinOrthop 1994;298:97-105.