

A Case of Successful Management in a Patient with a Left Hip Bipolar Femoral Cemented Broken Prosthesis

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Abstract

62 years old lady post Bipolar Hemiarthroplasty develops fracture of prosthesis. A step by step preparation and surgical aspect in broken hip prosthesis in a cemented hip replacement is given. Detailed report from right from incision, removal of broken prosthesis, removal of cement, choice of prosthesis, reaming, hold of prosthesis, limb length equalization. Preventive measures of dislocation and rehabilitation.

Keywords: Left Hip; Broken Prosthesis

Background

Broken hip prosthesis in a cemented hip replacement is a challenging situation. One must expect the unexpected and be prepared for all the possibilities. Right from incision, removal of broken prosthesis, removal of cement, choice of prosthesis, reaming, hold of prosthesis, limb length equalization. Preventive measures of dislocation and rehabilitation.

Case Presentation

A 62-year-old female came to my OPD. She had a hemiarthroplasty of left hip, 4 years ago, but approximately 2 months ago noticed slowly increasing pain and discomfort to her anterolateral area of her left hip and upper thigh region, which started after a moderate traumatic accident. Pain was present even at rest, it was dull aching type pain, which was severe in intensity and aggravated by hip movements. She had difficulty in walking due to pain and was unable to bear weight on the left lower limb. She gave a history of thyrotoxicosis with grossly reduced pulmonary functions also. She was taking anti-thyroid medications as prescribed.

Examination findings

Her left lower limb was externally rotated. There was a diffuse swelling over the antero-lateral aspect of the upper part of her left thigh. The overlying skin was neither warm nor inflamed, but on deep palpation, severe tenderness was elicited over the swollen area.

Investigations

Routine blood investigations were under normal limits. Plain radiographs of the left hip and thigh showed a broken cemented bipolar prosthesis. Her thyroid level was brought to normal. Pulmonary function test was same in spite of treatment. She was certified fit to undergo hip surgery under spinal and/ or epidural anaesthesia.



Figure 1: (A) Pre-operative X-Ray of left hip showing a cemented bipolar prosthesis which is now broken and (B) Scanogram.

Diagnosis and Management

The diagnosis of fractured cemented bipolar prosthesis implanted of the left hip was made. During surgery, the proximal part of the prosthesis came out with removal of cement and further hammering of the prosthesis was done to break the bondage. Extended trochanteric osteotomy (ETO) right upto greater trochanter (GT) was not done. Since two cerclages were already done and they were in the area which had bad quality bone, distal to the bone plug at 1 cm distal osteotomy with a muscle flap was done. All the cement and bone pieces were removed, and we found that the prosthesis was in 3 parts with no name of the manufacturer on the prosthesis. The bone quality was bad at the level of the bone plug. Both segments were reamed distally with 14 mm, a cerclage distal to the osteotomy level by 2 cms was put Proximally 15 mm reaming on guide wire. A Wagner 16 mm prosthesis was introduced. A 41 mm bipolar prosthesis would presumably be more difficult to get dislocated as compared to the total hip replacement. Finally, the subtrochanteric osteotomy was cerclage. Allografts were put in appropriate places and prophylactic antibiotic cement beads were inserted to avoid infection prophylactically.

Broken parts of fractured prosthesis and the cement which was removed



Figure 2: Removal of broken prosthesis and cement.



Figure 3: Intraoperative allografts being inserted.



Figure 4: Immediate Post Op X rays.



Figure 5: Immediate Post Op X rays.

Her postoperative period was uneventful. Postoperative X-rays showed well aligned prosthesis. Patient started non-weight bearing with the help of walker comfortably on the second postoperative day. Patient got discharged on fifth postoperative day. Skin staples were removed on the fifteenth postoperative day. Patient was followed up regularly with clinical and radiographic examination. Her wound healed well.

Good wound healing



Figure 6: 10th Day with Skin Staples.



Figure 7: 15th day post staple removal.



Figure 8: Post op X Ray AP.



Figure 9: Post op X Ray Lateral.

Discussion

Although Total Hip Arthroplasties (THA) has been associated with high levels of function and high survival rates, failures do still occur. The type and incidence of complications are time related. Short term complications usually occur within 6 months of surgery and these include luxation, fracture, and early cup loosening whereas the long-term complications include stem loosening, late cup loosening, and implant breakage. There are no Indian studies for providing related data, but the causes for failure of primary THAs have been studied in France [1]. Researchers found that the

mean time from primary procedure to revision THA was 11.2 years (range, 1 day to 42 years) and the mean age at revision was 70 years (range, 17 - 104 years). The causes for revision were mechanical loosening (42%), periprosthetic fracture (12%), infection (11%), wear/osteolysis (11%), dislocation (10%), surgical technique error (6%), and implant fracture (3%). This shows that implant fracture is an uncommon reason for the failure of THA. Stem fractures are more common and mostly occur in cemented prostheses due to loosening of the proximal cement, which leads to cantilever bending forces on the stem [2]. Revision surgery after total hip arthroplasty is increasing steadily in numbers. These procedures demand high performance from both the treating surgeon as well as the implants used [3]. Novel developments from basic research and industrial partners extend the possibilities for treating affected patients [4-7].

Conclusion

Revision surgery after THA are on the rise creating more demand of high performance from the treating surgeon. Novel developments from industrial partners for better implants performance need to be under consideration.

Bibliography

1. Delaunay C., *et al.* "What Are the Causes for Failures of Primary Hip Arthroplasties in France?" *Clinical Orthopaedics and Related Research* 471 (2013): 3863-3869.
2. Chun YS., *et al.* "Fracture of Fully-coated Femoral Stem after Primary Total Hip Arthroplasty for Non-union of Intertrochanteric Fracture: A Case Report". *Hip and Pelvis* 27 (2015): 179-182.
3. Gravius S., *et al.* "What can be done when hip prostheses fail? New trends in revision end prosthetics". *Orthopaedic* 40 (2011): 1084-1094.
4. Rathnavelu V., *et al.* "Potential role of bromelain in clinical and therapeutic applications". *Biomedical Reports* 5 (2016): 283-288.
5. Muhammad ZA and Ahmad T. "Therapeutic uses of pineapple-extracted bromelain in surgical care - A review". *Journal of Pakistan Medical Association* 67 (2017): 121-125.
6. Singer F., *et al.* "Phlogenzym versus diclofenac in the treatment of Activated Osteoarthritis of the knee: A double-blind prospective randomized study". *International Journal of Immunotherapy* 17 (2001): 135-141.
7. Tilwe GH., *et al.* "Efficacy and tolerability of oral enzyme therapy as compared to diclofenac in active osteoarthritis of knee joint: an open randomized controlled clinical trial". *Journal Association Physicians India* 49 (2001): 617-621.

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