Original Research Article

Dissociation of Implant following Hemi Replacement Arthroplasty in an Osteoporotic Male Patient: A Case Report

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Abstract

Hip fracture is a major health concern in elderly people. Thc standard line of management is hip arthroplasty classified whether it is intracapsular or extracapsular. Hemi arthroplasty is the preferred surgery in geriatric population as less mobility and the large diameter of the femur head reduces the chances of dislocation. There are 4 surgical techniques for Hemi -arthroplasty: anterior (Smith-Peterson), anterolateral (Watson. lones), lateral (Hardinge or Liverpool) and posterior (moore). Common complications of hip replacement include infection, fracture, dislocation, venous thrombosis, nerve palsy, chronic pain and implant failure. ln literature: there are very few reported cases of Dissociation of the Implant in hemi arthroplasty. We hereby present a case report on dissociation of prosthesis which was timely recognised and treated adequately. The cemented bipolar prosthesis used can also lead to dissociation of the implant components and thereby the need for open reduction. Identification of the difference between dislocation of head and dissociation of the prosthetic componcnts is vital for favourable patient prognosis.

Key words: hemi arthroplasty, implant failure, dislocation.

Introduction

The standard protocol of management in elderly population for end stage hip diseases and unstable femur fracture is bipolar hemiarthroplasty. Availability of different sizes of head and neck in bipolar implant enables the treating surgeon to select appropriate prosthesis taking into consideration the age of the patient and desired range of motion. However there are severe but few complications associated with bipolar implant like dislocation, dissociation of the prosthesis etc.[1] For hip dislocations, patients are generally treated by close reduction techniques. Whereas dissociation of the prosthesis necessitates the need for open reduction. Timely recognition and differentiation between dislocation and dissociation of the prosthesis is very crucial for management and better outcome of the patient.

Case Report

A 70 year old male, presented to orthopaedics OPD with with right hip pain, swelling and restricted mobility following slip and fall on the ground

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1 day back in may, 2018. He underwent clinical and radiological examinations in which he was diagnosed as fracture neck of femur of right hip secondary to age related osteoporosis following trivial trauma as shown in figure 1a.

Figure 1a: X-ray pelvis AP view showing right sided neck of femur fracture.

Considering the age of the patient, he was operated for hemi replacement arthroplasty by posterior approach for which cemented bipolar prosthesis was used. Postoperatively on 5th day, when he went back to his home he sustained a trivial fall after which he felt sudden severe pain at operated side which aggravated on movements, non radiating in nature for which patient came back to hospital and underwent clinical and radiological investigations. On examination, there was swelling in the hip region with no open wound, scar or dilated veins. On palpation there was tenderness over the right scarpas area with bitrochanteric compression test positive. There was no neurological signs or symptoms. Plain radiograph revealed a completely dissociated acetabular component of the prosthesis lying near the neck of the stem.

The patient underwent revision surgery of the hip and dissociated bipolar prosthetic part was removed and after trial appropriate size of the cup and stem were selected and hip was reduced in its anatomical position as depicted in figure 1 b.

Figure 1 b: Intraoperative image showing dissociated bipolar implant.

Following this revision surgery the patient has been followed up for 1 year and he is asymptomatic with favorable outcome. figure 1 c shows post operative X-ray of pelvis with prosthetic implant in situ.

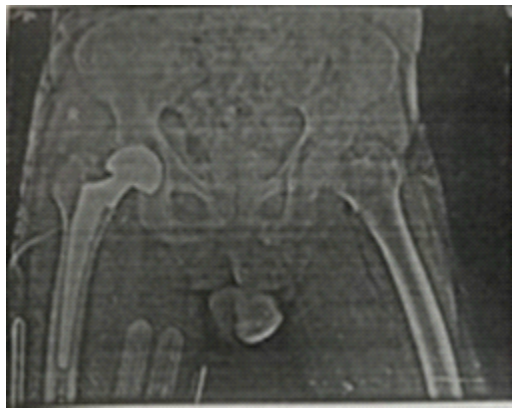

Figure 1 c: postoperative xray showing prosthetic implant in situ

Discussion

Over decades, hip hemiarthroplasty has been used successfully to manage end stage hip disorders and fracture of femur neck. Unipolar prosthesis were used initially but due to several disadvantages like recurrent dislocation. decreased range of mobility, more wear and friction of the acetabulua component of prosthesis superseded by bipolar prosthesis.. Dislocation of the prosthesis is a known complication after primary hemiarthroplasty and has been reported but dissociation of the implant is very rarely encountered causing significant permanent disability. There is 2.6% incidence of dislocation reported by Barneset al. in hips treated with bipolar hemiarthroplasty[2]

Here the most probable cause for this dissociation seem to be a weak bipolar bond between acetabulaum and femoral component if the implant or mechanically stressfull placement of the implant.[3]

The advantages of cemented prosthesis are improved post operative outcome and low rates of implant-related complications like dislocation, dissociation or peri-prosthetic femoral fracture[4].

Conclusion

Early diagnosis of this rare complication by orthopedic surgeons and its timely management by

open reduction and revision surgery plays a crucial role in decreasing morbidity of the patient and its successful outcome[5]. Postoperative radiographic examination should be kept routinely as a part of treatment protocol with patients who have undergone bipolar hemiarthroplasty.

Informed Consent: written informed consent was taken from patients.

Ethical Approval: ethical committee approval was taken from the institutional committee of ethics.

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Conflict of Interest: there was no conflict of interest.

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