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Total Knee Arthroplasty in a Patient with Open Distal Femoral Fracture with Bicondylar Hoffa Fracture: A Case Report

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Abstract

A 65- year- old male patient who sustained road traffic accident presented with complex distal femur fracture with bicondylar hoffa fracture. Primarily stabilization was done with knee spanning external fixator. Patient lost to follow-up for three months then came up with knee stiffness underwent Total Knee Arthroplasty with autoiliac bone grafting is reported.

Total knee Arthroplasty [TKA] was an alternative to internal fixation in a 65- year- old patient having complex distal femur fracture with knee stiffness and comorbidities. Preservation of knee function and early weight bearing should be the objective of management in elderly patients.

Keywords: Total Knee Arthroplasty; Knee Spanning External Fixator; Distal Femur Fracture; Elderly

Introduction

Distal femoral fractures in the elderly usually occur as a result of low energy trauma and are difficult to treat because of poor bone quality and pre-existing osteoarthritis [1,2].

Loss of fixation with failure of hardware, malunion, nonunion, knee stiffness can occur with various methods of internal fixation. Early weight bearing and preservation of knee function is the primary goal in management of these fractures [1-4].

Primary total knee arthroplasty [TKA] has been advocated as a treatment modality in patients with distal femoral fractures in elderly who already have a painful arthritic knee [1,4-9]. Most of them have been treated using a hinged prosthesis [1,4-6,8].

The aim of this study is to present a case of complex distal femur fracture with comorbidities who underwent total knee arthroplasty [TKA].

Case Report

The patient was 65- year-old male who sustained road traffic accident and presented with pain and swelling over right knee with a wound of size 5×3 over anteromedial aspect of knee. He had significant arthritic knee pain before injury. Neurovascular status of right knee was intact. Plain radiograph of right knee revealed a comminuted AO type 33 C fracture with bicondylar Hoffa figure 1and2. CT scan of knee revealed a comminuted intercondylar fracture. The wound was thoroughly debrided, and primary stabilization done with knee spanning external fixator and fixation of intercondylar region with one cannulated cancellous screw. During primary stay in the hospital the wound took long to heal. The patient lost to regular follow up and presented after 3 months of discharge from hospital with knee stiffness and severe scarring at injury site. The fixator was removed and all alternatives to treatment, risks and benefits were discussed with the patient. keeping in mind the level of comminution and need to return to pre injury ambulation, constrained total knee arthroplasty was decided

Citation: Anand Saurabh., et al. "Total Knee Arthroplasty in a Patient with Open Distal Femoral Fracture with Bicondylar Hoffa Fracture: A Case Report". Acta Scientific Orthopaedics 1.3 (2018): 13-16. upon and a proper consent was taken. A anterior midline incision was used and knee was approached through medial parapatellar arthrotomy. There was extensive comminution and bone loss in metaphyseal area. All the bony fragments and hematoma removed, and a rotating hinged total knee prosthesis was used [DePuy S-ROM NOILES knee with M.B.T revision] with auto- illiac bone grafting and cerclage wiring of distal femur done in TRAUMA CENTRE, IMS, BHU.

The patient had uneventful postoperative course. Patient was advised active quadriceps exercises and partial weight bearing for 2 weeks. After 3 months patient came for follow up with full weight bearing and pain free knee range of motion up to 90 degree. Radiographs taken after 3 months shows good alignment and restoration of joint line.

Figure 1 and 2: Antro-posterior and lateral radiograph of right knee showing open complex distal femur fracture OA type 33C.

Figure 6: Pre-operative clinical evaluation.

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Figure 4 and 5: Pre op radiograph after removal of fixator.

one cannulated cancellous screw.



Figure 7: Pre-operative Knee stiffness (flexion upto 20 ° possible).

Figure 8: Showing a rotating hinged total knee prosthesis.



Figure 10: Showing knee flexion up to 90 degree after 4 months.

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Discussion

Increased mortality and morbidity rates with high incidence of postoperative complications are reported in the management of distal femur fractures in the elderly [10-12]. Various methods of fixation for these fractures are available but the results of internal fixation in intra-articular comminuted fractures are unpredictable [13]. In elderly, poor bone quality and comminution at fracture site often leads to implant failure ,malunion, nonunion. Delayed primary arthroplasty is also an option. There is high complication rate and also it is technically very challenging as the anatomy gets distorted and there are pre-existing implants [13]. Single compartment arthroplasty was another option to consider but, long term results from total knee arthroplasty is well established [14].

Yoshino., *et al.* concluded that in the treatment of patients with distal femoral fractures which are complicated with knee osteoarthritis, the fracture type and the systemic condition should be taken into consideration [15]. In our opinion, in a patient who is 65-year-old having medical history of diabetes mellitus with severe comminution and preexisting osteoarthritis, early mobilization and restoration of knee range of motion would achieve greatest benefit through TKA.

Pearse., *et al.* reported total knee arthroplasty can be a good choice for elderly patients with distal femoral fracture [16]. In our view we have validated the author's remark.

Rosen., *et al.* [18] concluded that elderly population which sustain distal femur fracture usually have osteopenia, intra –articular fracture and preexisting arthritis. In these patients TKA is a relative indication. We advocate the view of the author.

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Wolfgang [17] took the view that in patients of intercondylar fracture femur complicated with rheumatoid arthritis, TKA is an appropriate surgical choice.

Haidukewych., *et al.* [19] showed that total knee arthroplasty is a good option in patients with failed internal fixation or nonunion.

We chose, total knee arthroplasty, with rotating hinge prosthesis in our 65-year-old patient with associated co-morbidities and a comminuted intra-articular fracture, to avoid complications associated with internal fixation and to get him back to the pre-injury level of ambulation with one surgical procedure

Conclusion

Total knee arthroplasty with rotating platform is a viable option for 65- year-old patients with complex distal femur fracture and comorbidities.

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