

DR, I FRACTURED MY PROSTHETIC KNEE

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INTRODUCTION

Pertiprosthetic fractures after total knee arthroplasty are challenging to treat. Tibial side are less commonly affected with only few studies and cases reported. We would like to present our patient that presented to us 5 years postoperative in whom revision rotating platform knee surgery was performed.

CASE REPORT

Madam F, 65-year-old lady presented with 2 weeks history of insidious right knee pain, swelling and instability 5 years post total knee replacement with no evidence of infection. Radiograph noted loosening and peri-prosthetic fracture of the right tibia component associated with fibula neck fracture with no evidence of biochemistry markers of infection.

Radiographs



Figure 1: Preoperative radiograph



Figure 2: Postoperative radiograph

DISCUSSION

Periprosthetic fracture of tibia TKA are less common as compared to femoral/ patella resulting in less management literature. More often, they are associated with loose/malaligned implant and bone deficiencies.

Madam F. had Felix et. Al Type II B (inferior to the tibial plateau adjacent to stem with loosening) fracture in which closed reduction and cast would not result in good results. In cases with bone loss with well-fixed prosthesis, internal fixation with locking plates system is a considerable option.

In this case, when tibial component instability (Type B) is present, revision TKA with slotted tibial long stem is gold standard to fix the implant to the tibial shaft using diaphyseal-engaging stems (DES). The advantages include diaphyseal referencing that helps component alignment and generally uncemented at stem level to facilitate removal if revision required. The design features of slotted and titanium also decreases stress at stem tip hence incidence of pain.

The concept of “canal-fill-ratio” (CFR) – stem width/ intramedullary canal width of more than 0.85 with minimal 4cm of diaphyseal fit is recommended for stability of uncemented stem.

Hybrid construct (cemented tray/ uncemented stem) in our case provides stress transfer of the patient that bypasses the fracture site to the distal diaphyseal fixation with no detrimental effect of bone loss/osteopenia of proximal tibia.

CONCLUSION

Felix Classification is useful in management of periprosthetic tibial fracture post TKA and revision rotating platform hybrid construct of tibial DES not only provides stability but also restores mechanical alignment disregard of metaphyseal bone quality.

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