# Revision knee system in bone loss: Cones or Sleeves?

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## INTRODUCTION:

Revision knee surgery is difficult even with proper planning.

## REPORT:

70-year-old, male with history of total knee replacement in both knees presented with right and left knee pain and swelling for 5 years duration. He has undergone 2 surgeries on the left knee with chronic patella dislocation and 1 surgery on the right knee. Clinically there is grade 2 laxity of both knee LCL and MCL. ROM right knee -5 to 120 degree, left knee 0-120 degree.

Preoperative knee aspirations were negative. Radiograph and CT scan showed loosening and both knee implant. Left patella is dislocated laterally. He underwent right knee revision with cones and constraint knee system in year 2022 and left knee with sleeves in year 2023.

There is large massive metaphysis bone loss over bilateral tibia and femur with normal ligaments integrity. AORI type 2B in right and left knee (femur and tibia). On the left knee, restoration of tibia tray back to the higher level of native cortical rim of tibia plateau was difficult with the largest sleeve available. Thickest polyethylene insert was used. Medial plication and lateral release of retinaculum was successful in relocating the patella. Post-surgery, patient is satisfied with no patella mal-tracking.

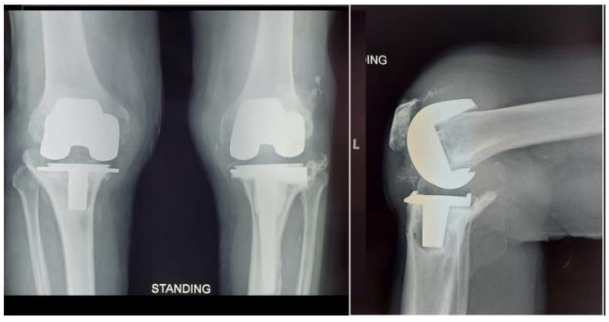


Figure 1: Preoperative Radiograph

**Figure 2: Standing Long Leg Radiograph**

## DISCUSSION/CONCLUSION:

It is vital to understand different revision system thoroughly especially its surgical fixation concepts and technique. The metaphyseal sleeve/tray is inserted in one unity with the stem simultaneously and surgical fixation is achieved first with press-fit zonal fixation and followed by joint line establishment. Cones is more suitable for large, wide and deep bone defect, especially in the case above with its advantage of separate stem/tibia tray and cone insertion and allows joint line establishment first while handling the defect together. This could also avoid usage of thicker polyethylene which could affect flexion gap tightness in order to balance extension gap.

## REFERENCES:

1. Siddiqi A et al. The Use of Metaphyseal Cones and Sleeves in Revision Total Knee Arthroplasty. J Am Acad Orthop Surg. 2021 Sep 15;29(18):e904-e920.