Filling a Metaphyseal Bone Void with a Persona® Revision Knee Trabecular Metal® Tibia Cone

A Case Study with Dr. Blake Peterson

When performing revision TKAs, surgeons often encounter bone defects and poor bone quality that make it challenging to restore a patient's natural knee function. Persona Revision Trabecular Metal Cones provide customers a solution to effectively fill bone defects while offering increased biological fixation that distributes loads closer to the joint line.

Trabecular Metal
Tibial Central Cone

Trabecular Metal
Tibial Perimeter Cone

Trabecular Metal
Femoral Central Cone

Trabecular Metal
Femoral Metaphyseal Cone

Case Study

Patient Data

- 74 Year old female
- Patient had a total knee replacement in 2016, and she did well initially but fell 1 year later and sustained a distal femur fracture that healed with a valgus nonunion
- Patient then developed progressive pain and instability

Preoperative Patient Condition

- Ambulates with pain
- Increased varus laxity
- Range of motion 0° to 120°
- 10° valgus alignment

Pre-operative Radiographs

Original Primary Prosthesis

Distal femur fracture that healed with a valgus nonunion

Surgeon Plan

- Reconstruct limb alignment and restore normal knee kinematics with the Persona Revision Knee System
- Both component revision with use of tibial cone for metaphyseal fixation and filling of void from implant removal
- Lateral distal femur augment was used to reconstruct the femoral joint line and alignment out of valgus

Post-operative results using the Persona Revision Knee System

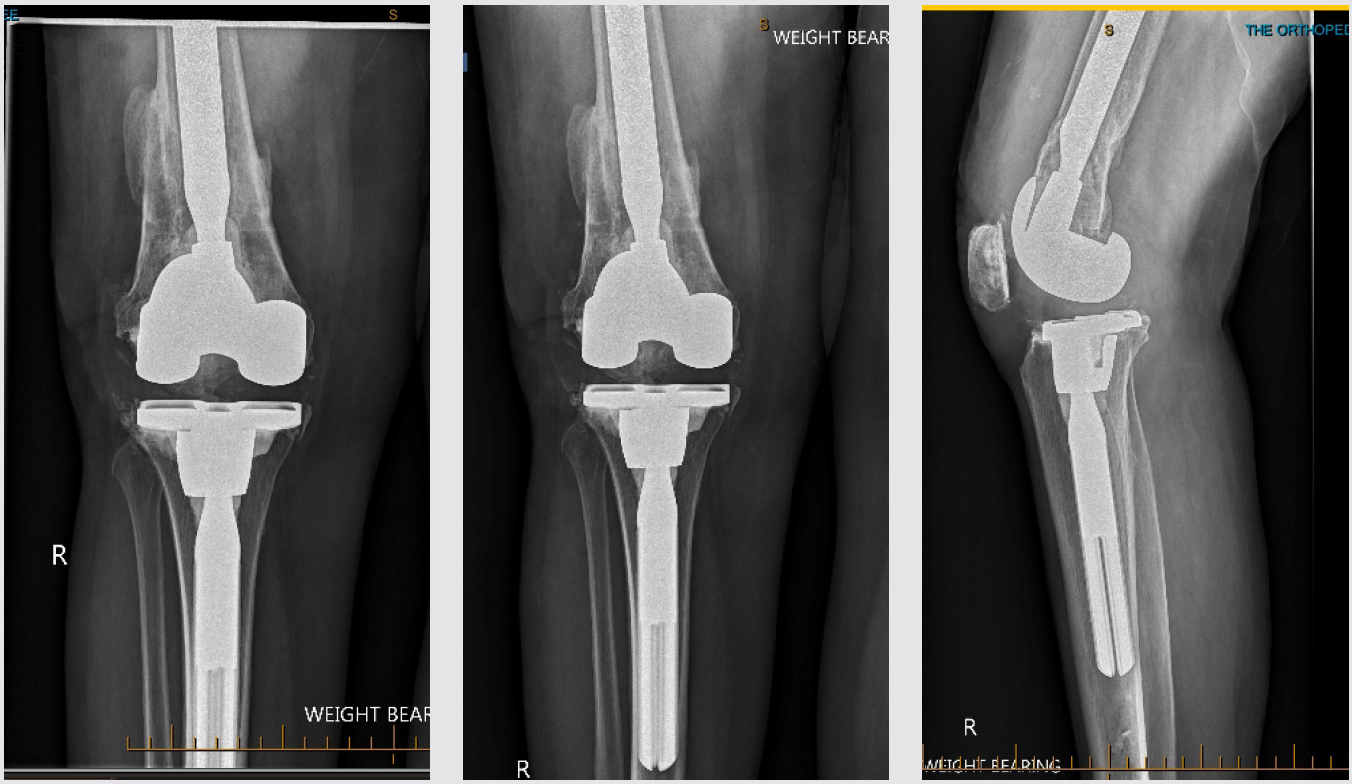
- Neutral limb alignment and full range of motion
- Normal patellar tracking and knee kinematics
- Ambulates safely and without pain

Dr. Blake Peterson's Commentary:

This is an excellent case demonstrating the ease of use and flexibility of the Persona Revision Knee System. On the femoral side, I was able to use distal femur augments, which can be measured and cut through the trial implant, to determine the appropriate size and restore the mechanical axis of the femur. I was also able to use a long splined stem with offset to engage the femoral canal proximal to the previous distal femur fracture. This was important for both restoring normal knee alignment in relation to the proximal femoral canal, as well as reducing fracture risk through the previous fracture site.

On the tibial side, I used a long splined stem and a metaphyseal trabecular metal cone that provided both void filling benefits as well as three points of fixation in the tibia, to help reduce risk of loosening over the years to come. The distal cutouts in the stem allowed me to get better fixation in the distal tibial canal, while reducing the stress contact point at the distal end of the stem.

Postoperative Radiographs



Postoperative radiographs of the Persona Revision construct with a Trabecular Metal Metaphyseal Tibial Cone

Each surgeon should exercise his or her own independent judgment in the diagnosis and treatment of an individual patient, and this information does not purport to replace the comprehensive training surgeons have received. As with all surgical procedures, the technique used in each case will depend on the surgeon's medical judgment as the best treatment for each patient. Results will vary based on health, weight, activity and other variables. Not all patients are candidates for this product and/or procedure.

References

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The surgeon is a paid consultant of Zimmer Biomet.

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