

# Advancing Health

**A CASE STUDY** from MedStar Washington Hospital Center

## Total Arthroplasty for Valgus Knee Arthritis

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### **Abstract**

An 81-year-old woman previously diagnosed with progressive valgus knee arthritis sought treatment to regain mobility, and live as independently as possible. Following a full evaluation of her condition and overall health, a total knee arthroplasty was performed with a cobalt chrome and ultra-high molecular weight highly-crosslinked polyethylene knee implant. The patient immediately experienced a significant increase in mobility and decrease in pain with no compromise to her lower leg motor functions.



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# CASE STUDY

## Total Arthroplasty for Valgus Knee Arthritis

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### Patient Presentation

- An 81-year-old woman had been previously diagnosed with valgus knee arthritis, resulting in painful “wind-swept” knees that required increasing reliance on a cane and walker.
- Although the condition had progressed over the years, the patient was reluctant to undergo surgery out of concern that it might prove unsuccessful, and that her age and mild diabetes might slow recovery. She also worried about surgical complications such as potential damage to her peroneal nerve, which might further limit her mobility.
- Patient also had poor bone density measured by a pre-operative DEXA scan indicating osteoporosis. She also had been diagnosed with mild hypertension and high cholesterol.
- No narcotic medications were being used to manage the pain.
- Despite the patient’s advanced age, her generally good health and level of motivation to address her condition made her an attractive candidate for a total knee arthroplasty for her right knee. Advised of the potential benefits and risks, including peroneal nerve damage, she consented to the procedure.

### Pre-Operative Surgical Planning and Considerations

- An integrated cobalt chrome and ultra-high molecular weight highly-crosslinked polyethylene knee implant was deemed to provide the best degree of stability for the patient’s current and long-term mobility.
- Digital templating was used to optimize the implant’s size and position.
- The patient’s procedure was scheduled for early in the day to limit fasting, thereby preventing major changes in glucose levels.
- Peri-operative antibiotics and a diluted Betadine solution were applied to the incision area to minimize diabetes-related infection risks.
- Through careful planning among the surgical team, the procedure was scheduled to last no more than 90 minutes.

### Assessment

- As part of the physical exam, weightbearing X-rays revealed the deformity was worse than indicated in previous non-weightbearing images.
- Tests such as DEXA scan and pre-operative labs confirmed that the patient’s bone density and other medical conditions did not preclude surgical treatment options.



**Savyasachi C. Thakkar, MD**

*“Valgus knee deformity is among the hardest forms of arthritis to treat, particularly as patients age. But even among elderly patients, there are treatments available that, under the right circumstances and properly executed, have the potential to alleviate pain and restore mobility in a relatively short time.”*

## **Treatment**

- The total knee arthroplasty was performed using a slightly constrained implant. No unexpected issues or conditions were encountered during the procedure.
- Anesthesia blocks of the sciatic and femoral nerves were performed with sciatic blocks only being dosed after the procedure was complete and peroneal nerve function was verified.
- Lateral releases were performed in a systematic stepwise fashion to appropriate balance soft tissue tension for a stable knee.

## **Outcome**

- The evening following the procedure, the patient was able to walk from her bed to a chair with little assistance.
- On post-op Day 1, the patient was able to walk unaided with minimal pain, and her right leg was no

longer in valgus but in neutral alignment.

- On post-op Day 2, she could move her knee from 0 degrees (full extension) to 90 degrees of flexion with minimal pain. Normal movement of patient’s right foot indicated no procedure-related damage to peroneal nerve. The patient was then discharged.

## **Conclusion**

- Total knee replacement surgery is a proven treatment option for valgus knee arthritis, and may be suitable for older patients. However, a host of considerations require careful assessment before moving forward with such a procedure. Among them are patient selection, moderated patient expectations, careful pre-op planning, a well-developed surgical path, and post-op care.

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To refer a patient, or to schedule an informational interview with Dr. Thakkar, please call **855-567-5274**.

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