

Distal femoral varus-corrective osteotomy

Dr. Sameh Labib, MD
Morgan Melquist, MS, LAT, ATC, OTC

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HPI

23 y/o female bilateral knee pain L>R; >5 years; BMI 27.5

Dx w/ discoid menisci, arthroscopies on both (6 y/o, 7 y/o)

Popping, giving out, catching/ locking in prolonged extension or flexion

Localized pain around patella and lateral joint line

Reported decreased QOL



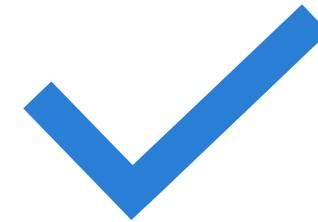
Exam

- TTP lateral compartment, lateral joint line
- Pain with AROM and PROM but full range
- 5/5 MMT
- Normal meniscal testing





Imaging



MRI w/o contrast

Attenuation of the anterior horn/body of lateral meniscus likely postsurgical, No focal tear or displacement or fragment identified

Tricompartmental osteoarthritis with full-thickness cartilage defect in medial compartment

TTTG: 8.3 mm

Full length leg x-rays AP

Mild-moderate valgus (11°) angulation of bilateral knees, slight joint space narrowing laterally of both knees



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Step 1: Patient position

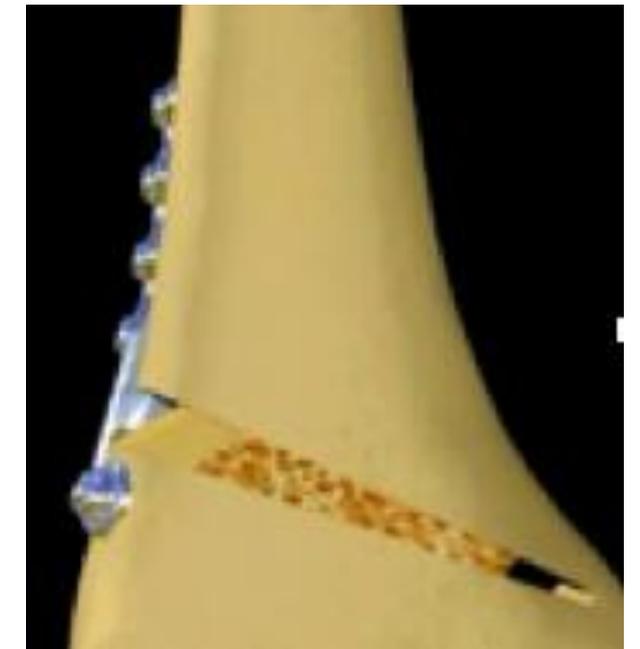
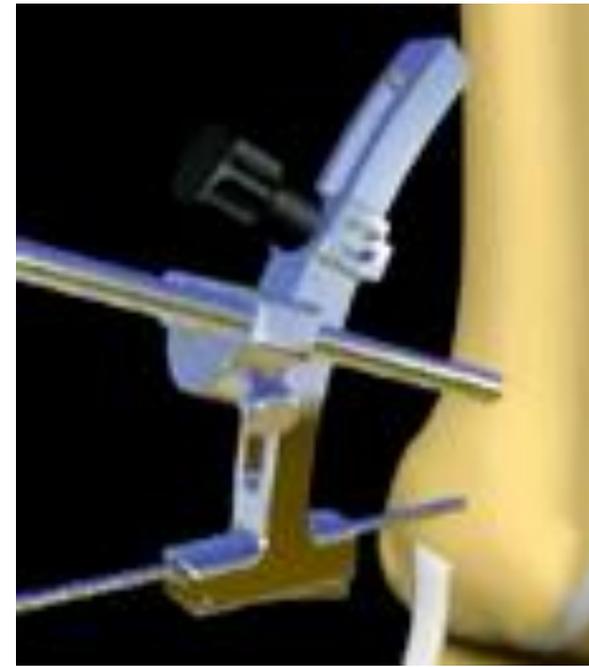
Step 2: Arthroscopy

Step 3: Incision and exposure

Step 4: Osteotomy

Step 5: Wedge opening and plate fixation

Step 6: Bone grafting

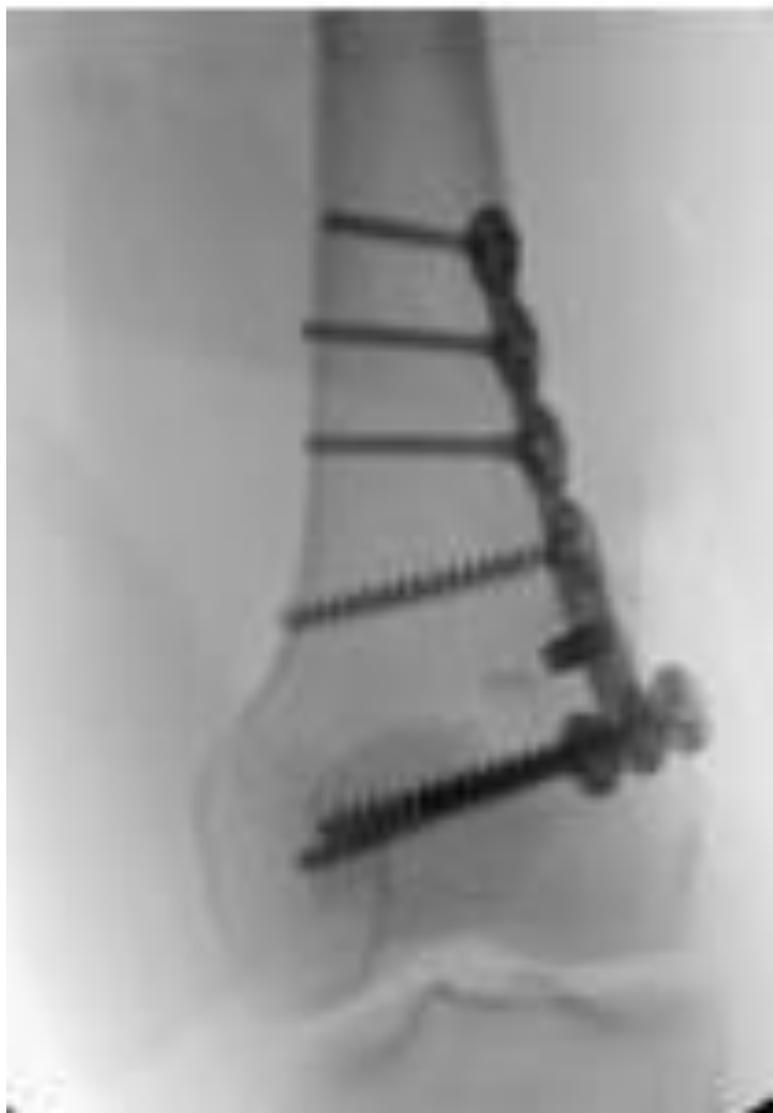


Puddu G et al. Which osteotomy for a valgus knee?

Procedure

- Measured with distal femoral guide
- 10mm open wedge
- After plate was inserted discovered overcorrection with too much anterior gapping
- Switched to 5mm wedge plate verified with intra-op mechanical axis
- Excellent fit
- $\text{Ca}_3(\text{PO}_4)_2$ Ossefferon inserted into wedge
- Stable and rigid fixation achieved





Intra-op

Post op plan

Hinged knee brace locked 0°-30° for the first 2 weeks

At week 3 begin increasing 15° per week

Transition partial to full WB at 8 weeks, d/c brace

Start PT at 8 weeks





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Chahla J et al. Opening-
and Closing-Wedge Distal
Femoral Osteotomy: A
Systematic Review of
Outcomes for Isolated
Lateral Compartment
Osteoarthritis

- 14 studies on DFO; 5 on OW, 9 CW
- Clinical and radiological outcome showed no significant difference
- CW is technically more difficult than OW due to necessity of preoperative planning and bony resection
- Main concern with OW is inferior mechanical stability at osteotomy site and longer healing time



Kim YC, et al. Distal Femoral Varus Osteotomy for Valgus Arthritis of the Knees: Systematic Review of Open versus Closed Wedge Osteotomy

Saithna et al. → 79% at 5 years OW

Madelaine et al. → 91.4% at 5 years in their OW

Backstein et al. → 82% at 10 years, 45% at 15 years CW

Finkelstein et al. → 83% at 4 years, 64% at 10 years. CW

OWDFO and CWDFO had similar performance.

KEY POINTS

OWDFO is technically easier compared with CWDFO

Education of future TKA should be communicated with patient
~15 years

Varus-correcting DFO can make a future TKR technically easier



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THANK YOU

