TKR in the Valgus Knee

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Disclosures
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Valgus Deformity
Less common than varus
Bone deformity
lateral femoral hypoplasia
Soft tissue problems
tight lateral side
stretched medial side

Bone Deformity
Primarily femoral
unlike varus: tibial deformity
distal deficiency
posterior deficiency
Complicates femoral component position

Distal Deficiency
Sloping joint line
Must be corrected
Final joint line parallel to floor

Distal Lateral Augment
5mm Distal Lateral Augment

Posterior Lateral Deficiency
Cannot rely on posterior referencing
Results in femoral internal rotation
Patellar mal-tracking

Sloping Joint Line
Use the Epicondylar Axis
- Avoids femoral internal rotation
- Patellar maltracking
- Check with Whiteside’s Line
- Helps correct soft tissue balance in flexion

Whiteside’s Line
- Deepest part of trochlea is normally centered on axis of rotation
- A line from deepest part of trochlea to highest point of intercondylar notch is at right angles to epicondylar axis

Normal Knee

Valgus Knee

Incorrect Rotation

Tibia in Valgus Knee
- Not the primary deformity
- May have secondary changes
- Lateral plateau deficiency

Soft Tissue Balancing
- More difficult than varus knees
- Sequential releases
- Tight lateral, +/- stretched medial
- Tight in flexion or extension, or both
- Flexion contracture or hyperextension
Correction of the Valgus Knee
- Remove osteophytes
- Assemble trial components
- Assess medial/lateral soft tissues
- In flexion, in extension

Soft Tissue Releases
- Tight laterally in extension:
  - Release the ITB
- Tight in flexion and extension:
  - Release the LCL +/- popliteus
- Still tight in extension:
  - Release the ITB
- This works for almost all knees

Osteophytes LFC
- Tight in Extension – most common
  - ITB at the Joint Line

Soft Tissue Releases
- Tight in Flexion and Extension
  - LCL +/- Popliteus from lateral epicondyle

Combined Flexion Contracture
- PCL substitution
- Extra distal femur resection
- Release posterolateral capsule by multiple perforations
- Lateral head of gastrocnemius

Insall “Pie-Crust” Technique

And ...
- Beware of the peroneal nerve,
  and warn the patient beforehand,
  especially with a combined flexion contracture
- Patellar tracking is often a problem
- Lateral release may be needed

Inside-out Lateral Release
- Preserve superior lateral geniculate artery
Implant Selection

- Mild valgus
- CR or PS
- Moderate valgus
- PS, may need augments
- Severe valgus with medial instability
- Constrained (TS or hinge)
- Stems, augments

Clinical Example

- JK, 72 yr old female
- OA right knee
- Severe valgus deformity
- Marked instability

Clinical Example

- Instability: valgus, hyperextension
- Medial stretching
- Hyperextension
- Total Stabilized TKR
- Stabilizes medial side
- Prevents over-stretching peroneal nerve

Thank You