Cleveland Clinic 2021 Arthritis Webinar Series: Advances in Knee Replacements

March 24, 2021- Michael C. Kolczun II, M.D.

Intro - The Problem 2021:

- Life Expectancy increasing
- Arthritis in young patients increasing
- Seniors expect to be active in retirement
- Compromising longevity pf prosthesis
- 6000,000 Total Knee Replacements (TKR)/Yr.

WHAT is Arthritis:

- Over 100 types
  - Osteoarthritis/degenerative/wear n tear
  - Rheumatoid Arthritis
  - Traumatic Arthritis

Loss of smooth, low friction surface "cushion" replaced by a rough high-friction surface. Joint replacement simply removes the rough surface of the arthritic joint and resurfaces the joint with smooth low friction surface.

WHEN to consider surgery:

- When medical non-surgical treatments are not helping:
  - Rest, analgesic pain meds non-steroidal anti-inflammatory "arthritis' meds, Physical Therapy, Unloader braces, Injections like cortisones, lubricants and Non-traditional treatments like diet, vitamins, chondroitin, sulfate and glucosamine.
- Missing out on fun with family, eroded quality of life and activities of daily living are limited

Surgical Choices:

- Osteotomy – HTO-High Tibial Osteotomy-Not predictable, not used very much today. Prevalent in the 50's & 60's
- Arthroscopic Surgery for continued pain, giving way, and recurrent swelling
  - Lavage
  - Debridement
  - Synovectomy
  - Meniscectomy
- Works well with very early disease, quick recovery and minimal joint space
- Unicompartmental knee resurfacing "Partial" knee replacement
  - A new way of looking at things
    - Traditional Orthopedic Approach TKR vs a Compartmental Approach PKR
    - Knee Osteoarthritis is a segment Disease
    - Uni-Knee Resurfacing is a segmental solution for a segmental disease
  - Principle of Surgery
    - Smallest operation that improves the patient's condition is the Best Operation

- Traditional total knee replacement
  - The Gold Standard
  - Surgical RX for OA Knee
  - Simple to complex

- Benefits of Uni vs TKR
    - More natural feeling
    - Smaller incision, less pain
    - Outpatient, shorter recovery time
    - No blood transfusion
    - No anti coagulation
    - Less morbidity
    - Greater ROM
    - Cost less
    - Operating time one hour
    - **Equal Pain relief**
    - **Greater patient satisfaction**
    - **Overall complications ½ of TKR**

When Do I choose Total Knee Replacement (TKR)

- Sever deformity
- Rheumatoid Arthritis
- Three Compartment Progression (Medial, Lateral and Patellofemoral)
- TKR Candidate
    - Late-stage arthritis - all 3 compartments involved
    - 65 years old and older
    - Failure of other treatments
    - Pain that limits active daily life
    - Incapacitate
    - RA – inflammatory arthritis
- Surgery time less than 1 hour
- Out of bed same day
- Hospitalized 1 day/outpatient
- Discharged directly home
- Rehab or skilled nursing home only for complicated medial indications
- Recovery 6-12 weeks

Advances

- Outpatient replacement surgery – At home and able to sleep in own bed, healthy patient with sick knee is the qualifier
    - PKR 70% home same day
    - TKR 25% home same day
- Enhanced Pre-op Preparation
    - Medical Clearance
    - Education
    - Immediate Pre-op
        - Hydration
        - Acetaminophen, Celebrex preemptively reduces tissue inflammation and post op pain
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- Enhance Recovery after Surgery
    - Multimodal analgesia by multi-disciplinary team
    - Operation
        - Spinal anesthesia with general sedation, Ultrasound-guided saphenous (adductor canal)

        - Liposomal bupivacaine sub-periosteal injection
    - Post-Op
        - Ealy ambulation to prevent blood clots and pneumonia
- Robotic -Assisted Knee Replacement
    - Manual TKR/PKR vs Robotic TKR/PKR
    - Surgery is NOT performed by a robot
    - CT scan creates a 3-d model that defines the space safe for surgeon to operate robotic arm
    - Greater surgical precision with less tissue disturbance

Results

- **Knee Arthritis is no longer a game changer**
- **Maintain Independence**
- **Resume active life style**

Q&A

Notes during Q&A

- Are there age or weight limits to knee replacement?
    - Overall, the goal is to have as little surgery as possible. Each patient has to evaluate the risk vs. reward for themself. Dr. Kolczun stressed he tells the patient it is their knee
    - It is good to have someone come with you to appointment with surgeon to have a 2nd set of ears and someone to talk things over with following the appointment. This should be after you have made the mental commitment to have surgery.
    - Each doctor has their own patient weight limits. Generally, to consider is the heavier a patient is, the higher the force on the knee prosthesis and can reduce life expectancy of the knee replacement hardware
    - Patients don't "age out" but they could "health out" –no upper limit on age as long as the person is "a healthy patient with a sick knee"

- Stem Cell
    - May provide some pain relief but won't regrow cartilage
    - Very expensive (can be as much as $15,000 per knee) and not covered by insurance

- A runner with knee arthritis can continue running if they can tolerate the pain and they enjoy running
- If a patient has a partial knee replacement and years later experiences knee pain, they need to be re-evaluated. There can be no diagnosis or treatment without examination.

- Pain medication post-surgery
    - Very limited narcotics because several pain blocks are used during surgery. Some last up to 72 hours. Blocks help eliminate some of the greatest post-op pain.

- On questions relative to Covid vaccine relative to surgery, Dr. Kolczun shared best data at this point in time, recognizing that the guidance could change as we are learning more every day.
    - His advice: Vaccine should be highest priority – the vaccine is more important than surgery because "OA will not kill you"
    - If getting the vaccine <u>before</u> surgery, wait at least one week <u>before</u> surgery
    - If getting the vaccine <u>after</u> surgery, wait at least 2 weeks <u>after</u> surgery