

Traditional TKR/Rehab

John O'Halloran
MSPT,ATC,CertMDT

IN DEMAND....

- Joint Replacement surgery is on the rise 500,000 surgeries will be performed this year
- By 2030 it is estimated to triple to 1.5 million
- The Knee is the most in-demand surgery

WHY?

- Once just for the elderly now due to:
- OBESITY
- BABY BOOMERS WHO WERE AND CONTINUE TO BE ACTIVE

OBESITY

- Every pound puts an extra 5 pounds of strain on the knee

BABY BOOMERS

- The population is about to explode
- Desire to stay active
- Desire to resume work and play quicker
- This has contributed to the rise in technology with joint replacement surgery
- Rehab professionals must meet this demand

OBJECTIVES

- Discuss current review of the literature for traditional TKR rehab and compare and contrast surgical advances such as computer assisted TKR and minimally invasive TKR
- Learn how to integrate current research literature into rehab plans
- Learn functional progression of exercises following TKR

TKR GOALS

- Decrease pain
- Maximize ADL function
- Maximize quality of life
- Reduction in functional impairments

Review of literature-impact on outcomes

- Compare and Contrast less invasive TKR
- Compare and contrast computer assisted joint replacement
- Review of Literature : ROM,CPM,NMES

Compare and Contrast less invasive TKR

- Advantages-Tissue sparing
 - Cosmesis-small incision
 - **Traditionally TKR 8-10”
incision vs. 4”
 - pain relief
 - less bleeding
 - shorter hospital stay

Disadvantages-less invasive TKR vs. Traditional TKR

- Longer operative time
- “Can’t see what you are doing”
- Mal-alignment potential-which means possible loss of motion and pain etc

Outcome Research-less Invasive vs. Traditional TKR

- At 3 months no difference in function

Compare and Contrast Computer Assisted (CAS) TKR vs. Traditional TKR

Advantages-CAS

- Infrared guidance device allows surgeons to be more precise in alignment of the components (the computer tells the surgeon where to put the parts and assist in balancing the capsule)
- So ...it is the human eye vs. the computer
- In younger active patients this may be important

Disadvantages-CAS

- Cost
- Time
- Learning Curve

What are some of the most common reasons TKR patients get stiff?

- Infection-sudden loss of motion- R/O infection
- Poor balancing of the capsule-alignment
- Arthrofibrosis –certain patients get stiff with scar-require scope debridement or manipulation

Range of Motion-Literature Review

- Knee flexion ranges from 105-113 degrees
- Adequate ROM for ADL's

What do you do when your patient plateau's in ROM?

- Change to Plane
- Change the force
- Examples-techniques

Pre-operative PT-Literature Review

CPM-Literature Review

- An electronic search of MEDLINE, CINAHL over a 20 year period.....Advantages-
- CONCLUSION-CPM combined with PT vs. PT alone offered short term beneficial results
- LOS, earlier motion and less need for knee manipulations
- Long term ROM and Function no difference

Quadriceps Function

If this impairment is not addressed functional outcomes will be affected

NMES-Literature Review

- Average Quadriceps Torque Deficits are approximately 25% AND persist indefinitely after TKR
- A 40% Torque force deficit is normal one month after surgery
- So what about early implementation of NMES ??

Clinical Examples

- Knee Extension
- Knee Flexion

Generally Accepted Functional Activities

- 0-4 weeks : walker to crutches to cane
WBAT
- Stationary bike at 2-3 weeks for ROM and exercise at 6 weeks
- Water jogging- 7 weeks
- Swim with fins 8 weeks
- Elliptical – 8 weeks
- Golf and outdoor bike riding- 12 weeks