OutPatient Hip and Knee replacement utilizing Surgeon-Interactive Robotic Arm Surgery

MY EXPERIENCE

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MAKO... Why and why now?

Joe’s top ten reason for switching to MAKO
• Wanting better outcomes for patients
• Admit Everyone has outliers
• Not all outliers fail, but in most circumstances outliers fail more often
• Forced to plan and THINK about case before you cut!
• Avoid complications with tools (eccentric reaming, incorrect COR, ream through pelvis)
• Get the leg lengths right!
• Admit there is more than one way to fix a bad knee
• Really balance a knee!!
• Didn’t like replacing compartments with minimal disease
• Admitting you’re not perfect

Conventional Techniques Advanced Alignment Tools Precision Surgical Assistance

Manual Guides Navigation Systems MAKOplasty® Robotic Arm Assisted THA And Uni Knee

Implant Alignment/Balancing Options - my journey

Complications in Total Hip Arthroplasty

• Short Term
  • Dislocation is the leading short term complication for total hip Replacements – National average is around 2.5%  
• Leg Length Discrepancy

• Long Term
  • Implant loosening caused by vertical cups and polyethylene wear  
  • Accelerated Wear

Limitations of Conventional THA Technique

About 50% of Acetabular Cups are Malpositioned according to a recent paper published from Massachusetts General Hospital.


Pre-operative Planning

PLANNING GOALS

- cup abduction
- cup version
- hip COR
- LL Offset
  - Femoral version
- goal to obtain bone coverage, stability and maintenance or restoration of kinematics
RIO® Enables Consistently Reproducible Precision

Pre-operative Planning

Femoral version
Fluctuation of Cup Orientation During Press-Fit Insertion: A Possible Cause of Malpositioning

Takashi Nishii, MD, Takashi Sakai, MD, Masaki Takao, MD, Nobuhiko Sugano, MD

Pre-operative Planning

MAKOplasty® Hip

- My experience - first cases May, 2015
  - within first 10 cases, surgical time minimal difference to pre-robotic times (experienced with surgical navigation for over a decade)
  - Most recent cases, 3 minutes faster than prior to robotics
  - typical skin incision time to all final implants in range 25-50 minutes, avg. ~40 minutes
  - now have 3 robots in use, 2 at outpatient center, 1 at hospital

MAKOplasty® Hip Potential Patient Value

- Reduced risk of leg length discrepancy
- Decreased risk of dislocation
- Improved soft tissue tension of the hip
- Improved post-operative range of motion
- Improved implant survivorship
- Rapid pain relief and return to daily activities (when combined with muscle sparing approach and post-operative pain protocols)
RIO® Enables Consistently Reproducible Precision

Pre-operative Planning

MAKOplasty® Benefits

1. Optimized Femur & Tibia Joint Positioning & Sizing
2. Enhanced Alignment Enhanced & Robotic Arm
3. Optimizes Bone Preparation

MAKOplasty® is Enabled by the RIO® Robotic Arm Interactive Orthopedic System

Cartilage to Implant Transitions

Ligament Balancing

Intra-operative Registration
MAKOplasty® is Enabled by the RIO® Robotic Arm Interactive Orthopedic System

RIO® Enables Consistently Reproducible Precision

Post-operative X-rays - Unicondylar

RIO® Enables Consistently Reproducible Precision

Post-operative X-rays - Patellofemoral

RIO® Enables Consistently Reproducible Precision

Post-operative X-rays - Bicompartmental

MAKO in Saint Cloud MN

Outpatient Center

May 2015 purchased MAKO robot first case mid MAY

October 2015 - 5 surgeon users

November 2015, 2nd robot delivered
Now 6 surgeon users

LMR 1st MAKO TKA scheduled, November

Hospital

April 2016 , first robot delivered cases started April

MAKO in Saint Cloud MN

Outpatient Joint Replacement

Why Robotics?

Our practices bias towards technology >12yrs

Patient demand, drives market share

Differentiator from competition (pays for itself)

Better for the patient
Robotic Arm Assisted Outpatient Joint Replacement

You are invited to a FREE informational seminar featuring MAKO Robotics, the latest technology for partial knee resurfacing and hip replacement procedures.

Hosted by St. Cloud Surgical Center & St. Cloud Orthopedics, innovative leaders in next generation technology for outpatient joint replacement.

• Minimally Invasive
• Muscle Sparing
• Patient Specific
• Less Preparation Time
• Accurate, Safe, Effective
• Home the Same Day
– Rapid Recovery

Dr. Joe Nessler
Board-Certified Orthopedic Surgeon

THURSDAY, DECEMBER 3rd 6 – 8 PM
Maple Grove Community Center
12951 Weaver Lake Road
Refreshments and light hors d'oeuvres served
RSVP by calling:
1-800-349-7272 x1010

Join us to learn how Dr. Joe Nessler, uses Stryker's robotic arm assisted technology to achieve the best results for his patients:

THIS WEEK!

MAKO - Patient education/Awareness
My assessment - a look back at first 2 years experience

Can enhance a practice
Can enhance a practice location
Can threaten the competitors

Most importantly
Patient enthusiasm and results are remarkable
Surgical precision unmatched
Usability/learning curve manageable

“Best thing I’ve done in years”
76 yo F, Bicomp. patient

Outpatient - who and how?

TKA, THA now all insurers except medicare/medicaid/federal programs
Uni knees all comers

Patient selection - ASA class 1, and stable class 2

NO restriction on BMI (within reason) Sleep apnea, NIDDM ok.

Anesthesia - general
TKA and uni’s, Adductor canal block pre-op

All joints, periarticular injection

Infection prevention - CHG showers, Betadine nasal swabs

Pre-medicate all
Celebrex 400mg
Neurontin 300mg
Oxycontin 10mg
Dexamethasone 10mg IV (nausea and pain)
Ceftriaxone 2gm IV pre-op

Important Considerations
-Importance of contract negotiation with insurers in advance
-no additional costs
-risk sharing bundled payment if possible
-surgeon reward for risk sharing

Our ASC
3 yr Capital lease 2 robots with
THA, Uni leases, & TKR software
Paying off all costs within first year

76 yo F, Bicomp. patient

October 2014 outpatient program started
Outpatient Total joint volume 2016 (cases done and scheduled)
>300 cases

May 2016 majority of all inpatient and outpatient hip and uni knee cases were robotic

November 2016 MAKO TKA starts - expect significant further growth

(this summer outpatient advisory panel to CMS recommended coverage of TKA as outpatient procedure in ASC’s)
**Outpatient - who and how?**

- **Post-op**
  - Additional dose dexamethasone 10mg IV
  - Toradol 15 mg IV once
  - Recovery unit IV dilaudid dose if necessary

- **Oxycontin 10mg bid x 5 days**
- **Ultracet 1-2 q6 hours prn for hips**
- **Norco 5/325 1-2 q6 hours prn knees**

**Blood management**

- **Tranexemic Acid** - topical or IV
- **Devices** - Hybrid Argon gas plasma scalpel (Canady)
  - Radiofrequency sealers (Aquamantys, Peak)

Transfusion rates should be 1% or less all comers

**Outpatient transfusion rates 0%**

**Outpatient - who and how?**

- **First 100 patients** - 2, 23 hours stays
- **All my patients since** - d/c average 4-6 hours post-op
  (to home, no services other than family or friend caregiver)

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**My assessment - a look back at first 2 years experience**

- **My experience - after the first year**
  - >180 outpatient Uni knee/THA/TKA 2016
  - Less rounds/paperwork

**Outpatient TJA**

- **25-30% of my practice**

**Total Knee**

**Robotic-arm assisted bone preparation**

- **5 SCOA surgeons certified in MAKO Robotic TKA**