

Joint Surgery

- **Goals of surgery**
 - Relieve pain
 - Improve joint motion
 - Correct deformity & malalignment
 - Remove debris
- Reasons for surgery
 - Trauma, Arthritic processes, Painful conditions causing functional disability
- **Arthroscopy**
 - Insertion of an endoscope into a joint for direct visualization of the joint
 - Used for diagnosis, biopsy, and treatment
 - Usually for the knee joint
 - Tourniquet : ↓ blood flow to area
 - Better visualization
 - Post-Op Care:
 - ✓ bleeding & S/S of infection
 - NV assessments
 - Ice & avoid excessive exercises 1-2 days
 - ✓ WB status
 - Analgesics
 - Assistive devices, PT
 - Complications:
 - Hemorrhage
 - Infection
 - Thrombophlebitis
 - NV compromise
- **Synovectomy**
 - Removal of synovial membrane
 - Used as a prophylactic measure & palliative treatment for RA
 - Helps prevent further damage
 - Best if done early in disease process to prevent serious joint destruction
 - Prevents extension of the inflammation into adjacent cartilage, ligaments & tendons
 - Cannot remove all the joint synovium, therefore disease is still present & will affect the regenerating synovium
 - Improvement in pain, weight bearing, ROM
 - Common: knees, elbow, wrist, & fingers
- **Osteotomy**
 - Cutting a bone to change its alignment
 - Used to correct deformity, relieve pain, & shift WB load to a less damaged area in the joint
 - Knee and hip joint
 - OA & RA
 - Post-op care is similar to internal fixation of a fracture (wires, screws, plates, bone grafts).
- **Debridement**
 - Degenerative debris
 - Usually Knee
 - Seen with arthroscopy

- **Arthrodesis**
 - Surgical fusion of a joint
 - Used to relieve pain & provide a stable joint
 - Last resort
 - Fusion occurs by removal of articular cartilage & adding bone grafts across the joint surface
 - Immobilize until bone healing occurs
 - Common sites = wrist, ankle, cervical & lumbar spine
- **Arthrotomy**
 - Joint exploration
 - Opening a joint → surgical incision
- **Tenotomy**
 - Cutting a tendon
- **Tendon Transfer**
 - Movement of a tendon insertion to improve function
- **Arthroplasty**
 - Reconstruction or replacement of a joint
 - Used to relieve pain, improve or maintain ROM, & correct deformity
 - Seen with OA, RA, avascular necrosis, congenital deformities, or dislocations
 - Types of Arthroplasty:
 - Hemiarthroplasty – part of a joint
 - Either femoral head or acetabulum of hip replaced
 - Total Joint Replacement
 - Any synovial joint
 - Elbow, shoulder, fingers, hips, knee, & ankle
 - Contraindications:
 - Infection
 - Severe inflammation
 - Advanced osteoporosis
 - Medically unstable
 - Cemented vs Cementless
 - Cemented = prosthesis held into bone with polymethylmethacrylate
 - Uncemented = prosthesis is treated with a special porous coating that promotes ingrowth of bone
 - Combo = implant a cementless cup & a cemented femoral component
 - Complications:
 - Thrombophlebitis
 - Wound Infection
 - Loosening of the cement
 - Dislocation
 - Fat Emboli –peak time 4th post-op day
 - Pre-Op:
 - Identify possible risk factors
 - Treat infections preoperatively
 - Teaching

- Post-op expectations, crutch/walker teaching
- Post-Op:
 - Proper positioning to prevent dislocation
 - NV assessments
 - ✓ dressing & reinforce prn
 - PT as ordered
 - Wound drainage assessments
 - Hemovac – closed wound drainage system
 - Need a vacuum (suction) to withdraw accumulated drainage
 - Promotes healing → without these, may develop abscesses
 - Need to be careful because it may not be sutured in place
 - Will not drain without the vacuum suction
 - If no drainage, ✓ air leaks
 - Autotransfusion
 - Transfuse the patient’s own blood & collect excess drainage
 - Must transfuse blood within 8 hours after insertion → whole blood
 - Drainage after 8° is usually old blood & debris
- **Total Joint Replacement**
 - **KNEE (TKR)**
 - Removal of diseased bone & articular cartilage of joint & replacement with artificial tibial and femoral components & a patellar button
 - Complications:
 - Loosening of components
 - Infection
 - Dislocation
 - Increased angulation
 - Post-Op Care:
 - Do not flex or hyper-extend the knee
 - Wound Care = maintain drain, assess dressing for drainage
 - CPM as ordered, helps with ROM
 - Exercises = plantar & dorsi-flexion of ankles, Isometric: quad / gluteal setting, straight leg raises
 - WB per MD – knee immobilizer when resting, walker when OOB
 - NV assessments
 - Pain management = ice, analgesics, positioning
 - Prophylactic antibiotics
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 - Discharge Instructions:
 - Continue WB restrictions & use assistive devices
 - Continue exercises (home CPM & PT)
 - VTE prophylaxis
- **Total Joint Replacement**
 - **HIP (THR)**
 - Replacement with artificial acetabular & femoral components
 - Complications:
 - Loosening of components
 - Infection
 - Dislocation
 - **Post-Op Care:**

- Proper positioning to avoid dislocation
 - No flexion > 90*, no adduction, no extreme internal or external rotation
 - No side-lying on operative side - prolonged
 - Abduction splint/pillow maintained – straps can compress peroneal nerve → foot drop
- Wound Care = maintain drain, assess dressing
- NV assessments
- Activity
 - WB as ordered
 - Exercises: Flexion of ankles, quad/glute setting
 - Avoid flexion & adduction
- Prophylactic antibiotics

- Pain management = ice, analgesics, positioning
- Discharge Instructions:
 - Position restrictions (4 – 6 weeks)
 - Equipment – raised toilet seat, long handled shoe horn
 - VTE prophylaxis
- Hip Dislocation
 - S/S = sudden severe pain, shortened extremity, NV changes, loss of function of affected extremity, hip deformity, palpable bulge at hip, swelling
- Hip Dislocation
 - Anterior = external rotation & abduction
 - Posterior = internal rotation & adduction
 - Need to notify MD immediately

- **Total Joint Replacement**

- **Total Shoulder Replacement**

- Most complex joint in body → greatest ROM
 - Ball & socket joint
 - Candidates: severe RA, OA, avascular necrosis, previous trauma, NEED adequate bone density and muscle strength
- Post-Op Care:
 - Positioning = sling & abductor splint, pillow behind elbow, ROM limitations
 - Wound Care = maintain drain, assess dressing
 - Pain management
 - PT/OT as ordered: equipment, ADL's, exercises
 - NV assessments
 - Complications: infection, prosthetic loosening, dislocation, wrong size, nerve injury