Elective Joint Replacement Care Model Summary

Indications and Contraindications

Indications for Surgery

In a patient desiring the elective procedure with full understanding of risks, benefits, course of care and alternatives.

-Persistent and debilitating pain, especially with motion or at night.

-Decreased ability to perform activities of daily living [Note: functional assessment evaluated preoperatively and at the 90 day period].

-Decreased quality of life due to pain and limitations.

-Failed adequate trial of conservative therapy.

-Other sources of hip or knee pain excluded.

Contraindications for Surgery

-Not medically able to undergo surgery and/or rehabilitation (recent MI, sustained angina, new onset or severely decompensated HF, severe anemia, significant arrhythmia, severe valvular disease, placement of DES within 12 months).

-Currently has active infection.

-Poor vascular supply, significant atherosclerotic disease of surgical leg.

-Neuromuscular disorders affecting the joint may be relative contraindications.

Preoperative Optimization

Referral to PCP for Medical Optimization

-Evaluate for medical contraindications for surgery.

-Optimize chronic disease including, CAD, DM, COPD, vascular disease, renal disease, other.

-Encourage tobacco cessation preoperative inspiratory muscle training.

-Medication reconciliation to reduce risk of poly-pharmacy, psychotropic medications and to make recommendations to hold certain medications prior to surgery (NSAIDs, MAOI inhibitors, phentermine, fenfluramine, estrogen/SERMs, antiplatelet/ antithrombotic*) *May need special considerations).

Referral to Specialist

If indicated.

Referral to Preoperative Conditioning

-To improve general physical conditioning prior to surgery and to prepare patient for rehabilitation.

Referral to Preoperative Education

-To inform about the processes and expectations and reinforce self-management skills.

-Patients with COPD or asthma should be instructed on usage of incentive spirometry.

Referral to Preadmission Testing

-Evaluation by anesthesia.

-Completion of any presurgical testing, including for MRSA and MSSA.

Communication between providers is critical to ensure best patient care.

Perioperative Considerations

Antibiotic Prophylaxis

-If nasal screen positive for MRSA, intranasal mupirocin BID x 5 day prior to surgery.

-Chlorhexadine gluconate soap for bathing x 3 days including day of surgery.

-Antibiotic started 1 hour prior to surgery (2 hours for vancomycin) and discontinued by 24 hours. [SCIP measures].

-Cefazolin or Cefuroxime if MRSA negative and not PCN allergic.

-Vancomycin if MRSA positive or allergic; clindamycin alternative if PCN allergic.

-No clear consensus regarding the usage of antibiotic-laden cement for primary joint arthroplasty.

Glycemic Control

-DM should be controlled prior to elective surgery.

-Goals include FBG < 140 mg/dl and RBG < 180 mg/dl.

-Basal bolus insulin is the preferred method.

Transfusion Strategy

-MSHA system-wide strategy in development. .

-AABB recommends a restrictive transfusion strategy in stable patients with hemoglobin < 7 - 8 g/dl and in symptomatic patients or with preexisting cardiovascular disease and hemoglobin ≤ 8 g/dl.

Consider tranexamic acid

Physical Therapy

-Supervised range of motion exercises initiated day of surgery to facilitate recovery of function.

Perioperative Considerations

VTE Prophylaxis

-Early mobilization.

-Mechanical prophylaxis may include intermittent compression device or venous foot pump in hospital. Graded compression stockings may be used as an add-on.

-Pharmaceutical prophylaxis: there are several agents indicated for VTE prophylaxis in elective joint replacement. Each has advantages and disadvantages: decision for which agent should make with informed consent, taking into account comorbidities, prior history of VTEs, history of falls, patient preference. Options include: warfarin, low molecular weight heparin, fondaparinux, rivaroxaban, apixaban, dabigatran; aspirin is an alternative [apixaban and dabigatran have ACCP recommendations, but not FDA indication].

Sleep Apnea

-If patient previously diagnosed, have them bring therapeutic devices to hospital.

-If preoperative history suggestive of sleep apnea, AAOS recommends surgery delayed until definitive evaluation and treatment.

Multimodal Pain Management

-May include femoral nerve block, periarticular injection, acetaminophen, COX-2 NSAIDS, narcotics and GABA analogues.

Complications and Comments

Complications

-Mortality (0.5 - 1%)

-Anesthetic risk (related to overall health of patient)

-PE (0.2 - 0.3% - with prophylaxis)

-MI (0.2%)

-Tachyarrhythmia (0.6%)

-SSI (0.9 - 1.3%)

-Wound problem (dehiscence, hematoma)

-Periprosthetic fracture (<1%)

-Dislocation

-Nerve injury

-Vascular injury (uncommon)

-Aseptic loosening / osteolysis

-Cement-related hypotension

-Heterotopic ossification

-Leg length discrepancy (THA)

-Need for revision

Comments

-If both the ipsilateral hip and knee are candidates for arthroplasty, consider THA first because of ease of rehabilitation. (Easier to rehabilitate a THA with an arthritic knee than a TKA with an arthritic hip.)

-Bilateral simultaneous knee arthroplasty has been associated with increased risk of serious cardiopulmonary morbidity and mortality as compared with staged bilateral surgery and is not recommended

Discharge

Disposition

-Discussion about disposition should begin in the preoperative period to review expectations and allow adequate planning

-Discharge to home with either outpatient physical therapy or home health preferred (home exercises may be adequate for select patients)

-Discharge to SNF or (rarely) rehab required if not safe for patient to be discharged home

Physical Therapy

-Includes range of motion, gait training, quadriceps strengthening and instruction of performance of ADLs

Medications

-Pain medication and VTE prophylaxis

-Routine home medications (unless changed in hospital)

-Medication reconciliation important step to make sure no errors or confusion

Follow-up Appointments

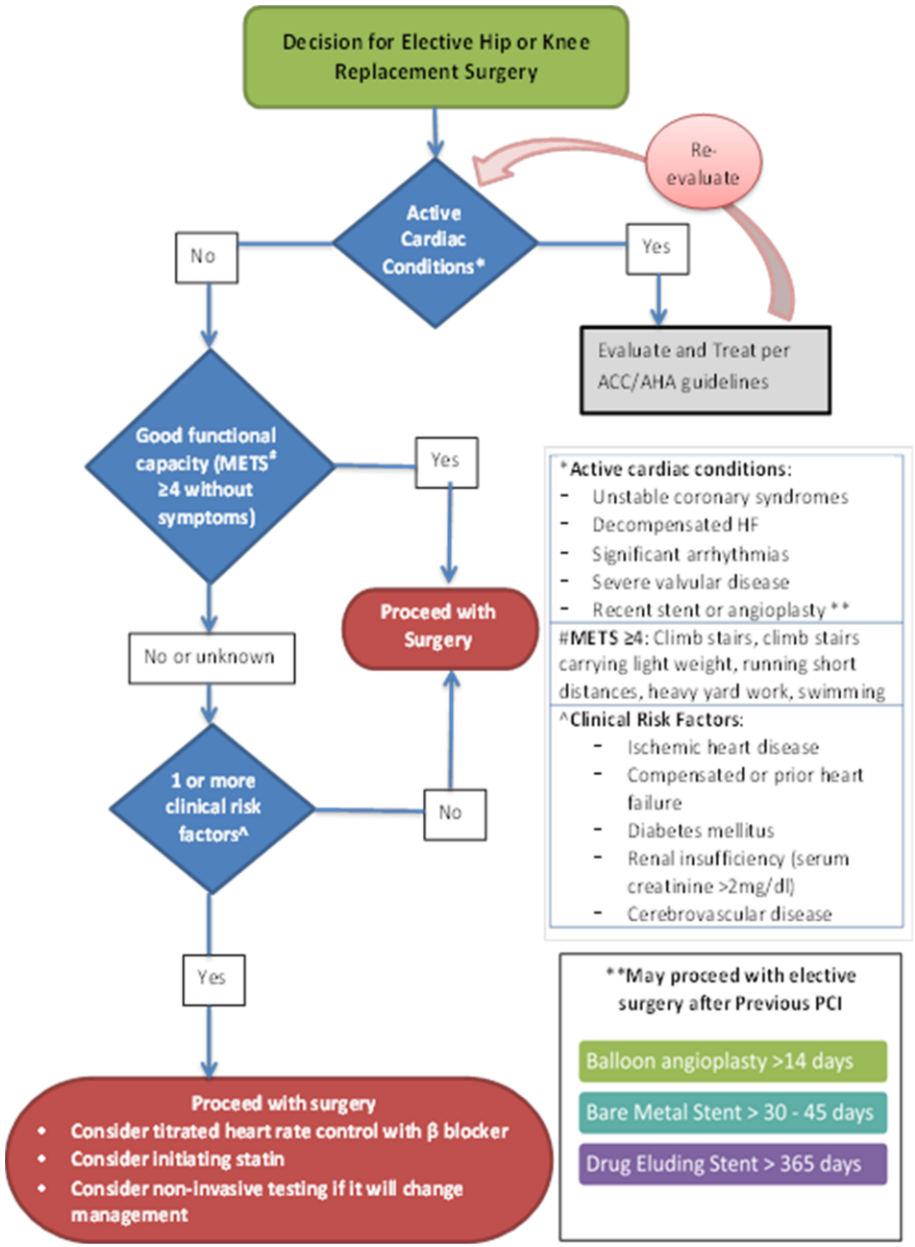
-PCP within 7 days of discharge (hospital or SNF) [Note: questions of wound care or infection should be managed by surgeon]

-Physical therapy (within 2 business days of discharge)

-Surgeon within 14 days of discharge

Special Consideration

-Routine antibiotic prophylaxis not routinely warranted for dental care



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