Objectives

- Discuss pre-op and post-op considerations for spine patients
Pre-Operative Considerations

• Informed Consent
• Education of Patients
• Discharge Planning
• Medical Issues
• Non-Medical Issues
• Special Populations
  - Non-Surgical/Geriatric/Pediatric Patients

Informed Consent

• verbalize the procedure
• understand risks, benefits, and alternatives
• staff participating in care
• post-operative expectations
Patient Education

• Education of patients is **KEY**

• understand patients expectations
  - pre-op preparation
  - procedure
  - outcome

• Be HONEST with patients about outcomes
  - Avoid **PROMISING** unrealistic expectations

Patient Education

• clarify procedure
  – PA, APN, RN spend most time with the patient

• utilize diagrams, models, pamphlets, websites
  • use caution when using the internet

• post-op instruction sheets prior to surgery
  – assist with the learning process
  – Reference material when patient is D/C home
Patient Education

- document patient education in medical record
- have surgeon specific information for patients
  - Each surgeon has own post-op recommendations
- give patient contact information while in hospital

Discharge Planning

- Discuss with patient, family, caregivers prior to surgery
- expectations of those involved in patients care
- Patient and family should understand recommendations come from surgical team, PT, and case managers
Discharge Planning
Post-Hospital Care Programs

• Home Care
  - Promotes independent living
  - Improved mobility
  - Meaningful quality of life
  - Availability of specialty services
    • Diabetic care
    • Infusion therapy
    • Rehab therapy
    • Wound care
    • Geriatric care

Discharge Planning
Post-Hospital Care Programs

• Short-term inpatient rehab
  • 3 hours of PT/OT per day
  • Medical staff available
  • Prepare patient to return home
  • hospital or local placement
  • 3 inpatient rehab facilities at CC and affiliated hospitals in the region
Discharge Planning
Post-Hospital Care Program

- Skilled Nursing Facility (SNF)
  - 1-2 hours of rehab treatment 5 days per week
  - recovering from difficult medical issues/surgery
  - able to tolerate moderate exercise
  - MD supervise medical/rehab care
  - 2 facilities here at CC

Discharge Planning
Post-Hospital Care Programs

- Skilled Nursing Facility (SNF) Connected Care
  - Innovative program not available in all hospitals
  - receive expert medical care five days a week
  - Keep connected record of services in EMR
  - Participate in specialized rehab care paths aimed at helping them make faster recovery
  - 8 facilities here at CC that offer these services
Discharge Planning
Post-Hospital Care Program

• Palliative Medicine Program
  - consultation/care planning for those patient with advanced or end-stage diseases
  - still receiving active treatment
  - Goals
    • Anticipate, relieve, prevent suffering
    • Encourage remaining quality of life

Discharge Planning
Post-Hospital Care Program

• Hospice Care
  - Assist terminal patients/families
  - Prepare physically, spiritually, mentally for the end of life
  - Routine and 24 hour visits when needed
  - Medical equipment and medications delivered
  - Provide respite care when primary caregiver needs a rest from caregiver responsibilities
Discharge Planning

• Determine the needs of the patient upon D/C
  – Knowledge of the patients environment
  – Who will be assisting in their care
  – Important to recovery

  – Hospital based or local placement
    • Accessibility for family/caregivers
    • Optimize patient throughput
    • Role of rehab MD upon admission

• Return to work
  – Varies depending on surgery, patient, type of occupation

• Disability issues
  – Short/Long Term
  – Establish Practice guidelines for filling out paperwork/FMLA

• Medication refills
  – Establish CLEAR practice guidelines for medication refills
    • Prescribing prior to surgery – referring MD/pain management
    • Prescribing after surgery - practice guidelines regarding narcotic refills

• Post-Operative Follow-up
  – Suture removal, scheduled post-op visits
  – Need for post-op imaging
Medical Issues

- Pre-op history/physical
  - Performed by PA/APN/resident/MD (pre-op IM department)
  - good for 30 days
  - Patient education visit
  - Skin prep/nasal swab each surgical patient

- Pre-op labs
  - Different protocols for different facilities/surgeons
  - CBC w/PLT, BMP, PT, PTT, type/screen, UA (standard CC)
  - Type and screen (large cases/scoliosis cases/tumor cases)

Medical Issues

- EKG/CXR
  - Standard over the age of 50, or if positive PMH/FH

- PFT’s, Stress Test, ECHO, etc
  - If indicated due to past medical history, acute findings

- Consultations
  - Anesthesia: allergy, difficult intubations, fiber optic/awake
  - Subspecialties:
    - Cardiology
    - Pulmonology
    - ENT: vocal cord assessment, previous anterior neck surgery
    - Vascular: anterior lumbar approach/PAD
    - Thoracic surgery: thoracic approach
    - Orthopedics: knee, hip, shoulder pathology
Medical Issues

- Tobacco Use
  - quit prior to elective (non-urgent) fusion cases
  - 6 week minimum from time all nicotine forms stopped
  - Can lead to poor healing
  - affects vascularization leads to high non-union rate

- Nicotine/co-nicotine – 3 day turnaround
  - Nicotine/co-nicotine metabolites in blood

- Carboxyhemoglobin – 24 hour turnaround
  - HGB that has carbon monoxide linked instead of normal oxygen
  - Quick screening test

Medical Issues

- Latex Allergy
  - Usually scheduled first
  - Awareness of surgeons team and OR staff
  - Special set-up if necessary

- Alcohol Issues
  - Withdrawl issues with longer admissions

- Illicit Drug Use
  - Obtain good social history
Medical Issues

- Regular narcotic use
  - difficult to manage with post-operative pain
  - consult pain management/chronic pain service prior to surgery

- NSAIDS/ASA/Herbal Medications/Vitamins
  - discontinue 7-10 days prior to surgery
  - Practice guideline for resuming NSAID use following fusion
    - Literature has not established clear guidelines

- Plavix/Coumadin
  - Consult with patients PCP/vascular medicine as to date to d/c
  - May require bridge dosing with lovenox in some cases
  - when it is safe to resume anticogualtion

Non-Medical Pre-Op Considerations

- Bracing
  - Schedule pre-operative fitting if possible
  - patient becomes familiar with bracing
  - arrives on time in order to mobilize immediately
  - aids in quicker recovery, and decreases post-op complications
  - D/C to home or rehab is not delayed
  - ensure proper fit prior to discharge
  - May require follow-up visit with orthotics for adjustments
Non Medical Pre-Op Considerations

- OR Needs
  - Surgeon specific
  - Pre-op films (MRI, CT, XR)
  - Surgical Equipment
    - Table
    - microscope
    - Image guidance and fluoro
    - Instrumentation sets
    - bone grafts
    - neuromonitoring
    - specialized/custom needs

Special Patient Populations

- Non-Surgical Patients
- Geriatric Population
- Pediatric Population
Special Patient Populations

• Non-Surgical Patient
  - Often times our greatest challenge
  - Occupy lengthy amount of phone/office hours
  - Non-surgical pathology versus no pathology
  - why they are not a surgical candidate when others have told them they need surgery
  - Often depressed, anxious, use chronic pain medication
  - May need referral to multi-disciplinary program
    - Chronic pain rehab program - CC
    - Comprehensive spine clinic (MD/psych) - CC

Special Patient Populations

• Geriatric Population
  - Need additional time/education
  - Management of multiple co-morbidities
  - Nutritional issues
  - Bone quality with fusion cases
  - Bracing compliance
  - increased complication rate
  - minimize OR time
  - Need for some type of rehab placement
  - Lack of support in some cases
Special Patient Populations

• Pediatric Population
  – effects of anesthesia and pain medications
  – First time in the hospital or having surgery
  – psychological issues related to surgery
  – social work consultation
  – Child life consult (CC)

Post-Operative Considerations

• Cervical Cases
  – Anterior
    • ACDF
    • Corpectomy
  – Posterior
    • Laminectomy/Fusion
    • Laminoplasty
Post-Operative Considerations

• Lumbar Cases
  – Anterior
    • ALIF
    • ALIF/Percutaneous Fusion
  – Posterior
    • Microdiskectomy/MIS
    • Laminectomy/Decompression
    • Lumbar Fusion
    • Vertebral augmentation

• Complications:
  – Hoarseness: affects recurrent laryngeal nerve in about 5-7% of patients
  – Swallowing: 50% affected in the 1st week with improvement thereafter
  – Sore throat/Swelling: result of retraction/ET placement

• AUTOgraft vs. ALLOgraft
  – ~30% of patients may have chronic graft pain

• Diet should be progressed as tolerated
• Bracing and drains are surgeon specific
• Evaluate ALL incision sites

ACDF
Anterior Cervical Surgery

- Complete NEURO exam
- Avoid NSAIDS
  - timeline is debatable
  - inflammatory phase of bone healing ~ 6 weeks
  - most will avoid NSAIDS during this period
- Extent of operation usually dictates the length of symptoms
- Myelopathic patients
  - GOAL is to STOP progression of symptoms
  - improvement in symptoms is variable
  - up to 12 months before residual deficits may be known

Posterior Cervical Surgery

- Most common complaint is neck pain/spasms
- Pain will often extend into shoulder/scapula/traps
  - spasms not typically treated well with narcotics
  - trial muscle relaxants to help relieve spasms
- Examine pin sites from positioning (remove staples)
- Bracing and drain are surgeon specific
- Complete neuro exam
Cervical Laminoplasty

- “Motion Saving” procedure
  - Debatable, long term follow-up?
  - Increases canal diameter
  - Allows cord to drift back
  - Avoids adjacent level disease/multi-level fusion
  - Patients w/o mechanical neck pain
  - Normal lordosis

- **EDUCATION IS KEY**
  - Lack of ROM can delay recovery
  - Begin ROM 1-2 days post-op

- Soft collar ~ 1-2 days for comfort

- Same medications as posterior fusion

Lumbar Microdiskectomy/MIS

- 23 observation or same day procedure

- MIS procedure
  - Smaller incision, longer surgery
  - Not ideal for older patients due to OR time
  - No bending, lifting, twisting x 6 weeks
  - Same restrictions as open disectomy

- Complete neurologic exam

- Treat post-op neuritis/radiculitis
  - Treat with NSAIDS/steroids/Lyrica/Neurontin
  - Usually resolves in 6 weeks or sooner
Laminectomy/Decompression

- multi-level disease and spinal stenosis
- Older patients slower to mobilize
- Encourage early ambulation/PT
- No bending, lifting, or twisting x 6 weeks
- Complete neuro exam
- Analgesics/muscle relaxants/lyrica/neurontin

Posterior Lumbar Fusion

- Longer operative time
- Slower to mobilize
- May or may not be braced
- Complete neurologic exam
- No bending, lifting, twisting x 6 weeks
- Avoidance of NSAID use for at least 6 weeks
- Analgesics/muscle relaxants/lyrica/neurontin
ALIF/ALIF w/post Fusion

- Abdominal/retroperitoneal approach
- Slower to begin oral intake
- Slower to mobilize because of abdominal discomfort
- Observe for abdominal distention
- Analgesics/muscle relaxants/lyrica/neurontin

Possible side effects:
- Retrograde ejaculation in males
- Neuropraxia

Vertebral Augmentation

- 23 hour observation or outpatient procedure
- Kyphoplasty/vertebroplasty
- Usually immediate relief fracture pain and minimal procedure pain
- Resume normal activities within days of surgery
- Treat underlying pathology
  - Tumor (multiple myeloma/metastasis)
  - Osteoporosis - Refer patient for management
General Post-Operative Considerations

• Daily rounds on patients
  – Bridge the gap between “inpatient/outpatient”
  – Helps provide quality patient care and aids in d/c planning
  – Eliminates extended patient stay
  – Patients are familiar with office staff
  – Work closely with PA/APN/residents on the floor

• D/C instructions
  – Written instructions for the patients/family

• Office contact information

• Follow-up instructions
  – Make post-op appointment upon d/c
  – 2 wk visit for wound check
  – Identify post-op wound infections and reduce readmission