How To Achieve Great Results in Spine Surgery in an ASC

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Board Certified Neurological Surgeon
Orthopaedic Spine Fellowships

- Mt Sinai Medical Center New York, NY
- Hospital for Joint Diseases, NYU New York, NY
- Spine Institute of New York, Beth Israel Medical Center New York, NY

6 yr ASC Experience

South Jersey Surgical Center
Mount Laurel, NJ

Shore Ambulatory Surgical Center
Somers Point, NJ

Why do Spine Surgery at an ASC?

Frustration with poor hospital patient/surgeon experience
Lack of nursing care
Lack of equipment
Limitations on choice of implants
No control over employee
Suboptimal care

Why do Spine Surgery at an ASC?

- Facility fee
- Control of environment
- Control of equipment
- Patient satisfaction
- Surgeon satisfaction
- Optimize Patient Care
- Optimize Surgical Outcomes

Why do Spine Surgery at an ASC?

Financial

-Surgeon Controls Facility Fees
-Surgeon Controls Surgical Fees
-Surgeon Controls Implant Costs

Deal directly with your payors to provide better care at a lower cost

ASC Spine Surgery Procedures

Anterior Cervical Discetomies and Fusions (ACDF) (1-3 levels)
Artificial Cervical Disc Replacements
Revision ACDF
Posterior Cervical Foraminotomies
Lumbar Discectomies/Laminectomies
Minimally Invasive Lumbar Fusions
Spinal Cord Stimulators

Spine Surgery Challenges

- Post op hematoma
- CSF leak
- Post op dysphagia
- ICU stays
- Pain control
- PT/ ambulation
- Urinary retention
- OR time

Patient Selection

-BMI<40
-ASA < Grade 3
- Psych issues
- Medical issues
- Social issues
- Smokers

Preoperative Planning

- Patient Education
- Patient/Family Expectations
- Decrease High Dose Narcotics
  - May not be able to control post op pain
  - High Narcotics= Low Fusion Rates

Design

Private Room
Plasma TV
Accommadations for family
Private/semi private Bathroom
1 to 1 Nurse

Operative Technique

Teaching Spine Surgeons how to perform surgery in an ASC setting
Meticulous review of surgeon's technique
"Tricks"
The Desire to Improve

Operative Technique

Magnification= Loupes
+
Illumination= Headlight
vs.
Microscope= $250K+

Operative Time: ACDF

- One level 45 min-72 min avg: 52 min
- Two levels 57 min-93 min avg: 74 min
- Three levels 91 min-141 min avg:118 min

Operative Technique: OR Staff

Assistant: PA, RNFA
Same person each time
Srub Tech
Xray Tech

Operative Technique: Anesthesia

Relative hypotension
Good Anesthesiologist
Easy Intubation/ Extubation
Wake up during Spinal Cord Stimulators
Muscle Relaxation
Decadron

Operative Technique: Hemostasis

Pre op cessation:
NSAIDS (7 days)
Plavix/ Coumadin (11-14 days)
Relative hypotension
Epidural Bleeding: Cottonoids
Meticulous hemostasis
Flocele
Avitene
Hemovac/ Drain

Operative Technique

Decadron
Proven to decrease post anesthesia nausea and vomitting
Possibly decreases post op airway edema and dysphagia
10 mg intraop
4 mg q 6 IVSS post op

Operative Technique: Urinary Retention

Time of surgery
No catheter
If Catheter remove immediately post op (in OR)
Early Ambulation
BPH

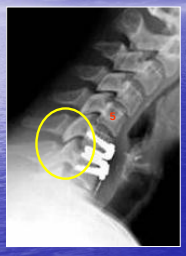
Operative Technique: Positioning

Cervical: Mayo Head Holder
Cervical Chin Traction 5-15lbs
Lumbar: Wilson Frame
Cervical Artificial Disc: Pain Table
Gel Head Holder
5 lbs Cervical Traction

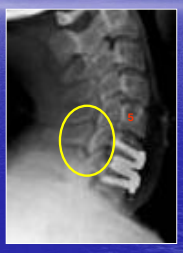
Fluoro draped in

Case Review #1

Ideal Candidate: 24 Month X-rays



Flexion



Extension

Operative Technique

Minimally Invasive
Small Incision(s)
Use pre op fluoro to plan incision
Neck: Spread soft tissues with a curved hemostat
Find Carotid Artery
Spine is medial and deep
Identify level with fluoro

Operative Technique: Retraction

Cervical:
Superior/Inferior Retraction: Caspar Pins
Start at most superior level
Remove the pin(s) when level decompression completed
Exception: severe spinal cord compression decompress that level first
Medial/Lateral Retraction: one pair Caspar Retractors with Blunt teeth medium width
Move to expose level working on
Plating: Hand held retractors

Operative Technique: BMA

Bone Marrow Aspirate
Pin sites
5cc syringe and angiocath
X2

Operative Technique: Cervical Discectomy

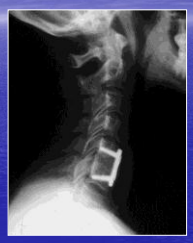
Large Straight Curette
Gross Discectomy
Avoid Vertebral Artery Injury
Smallest Angled Curette (Grossman)
Elevation of Posterior Longitudinal Ligament
2 and 3mm Kerrisons
PLL, Discectomy
Anterior and posterior osteophytes
Bone Graft Harvest

Operative Technique: Cervical Interbody Arthrodesis and Plating

Cervical ChinTraction with 5-15 lbs
NO ILIAC BONE GRAFT
Easy Sizing of Interbody Allograft/Cage
Drill endplates/ anterior cervical spine
Easy Plating system with few steps
Trick: Use first screw as a pin only placing half way

Anterior Surgery of the Cervical Spine

ACDF with instrumentation
- Higher fusion rates
- Improved lordosis
- Reduced immobilization requirements



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Operative Technique- Neurologic Safety

- Intraoperative neural monitoring
- Take high risk Cervical cases to Hospital

Post op Cervical

No collar except for passenger in car first month and showers

Moving head/neck immediately post op

Advance diet to soft/regular prior to d/c

Oral meds

Post op: Meds

Decadron

Anti nausea meds

Long acting Narcotic

Short acting Narcotic

Muscle relaxants

Ativan prn

Individualize to patient's needs

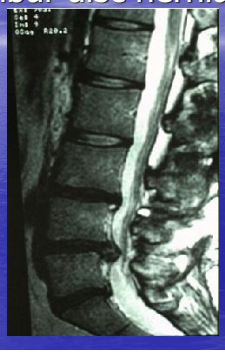
D/C Criteria

- Ambulatory
- Voiding
- Toleraing po
- Pain controlled
- Hemovac d/c
- monitored

23 Hour Stay

- 1 to 1 nursing care
- Nurse anesthetist or anesthesiologist in house
- Private room with bed for family member

Lumbar disc herniation



Operative Technique

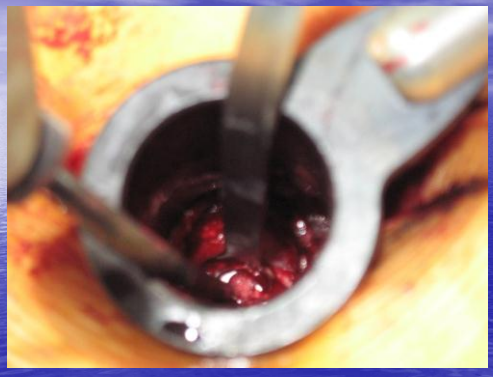
Lumbar: Use fluoro to identify where you are and level

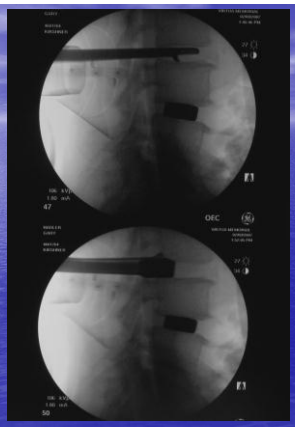
Local Anesthetic skin +/- muscle

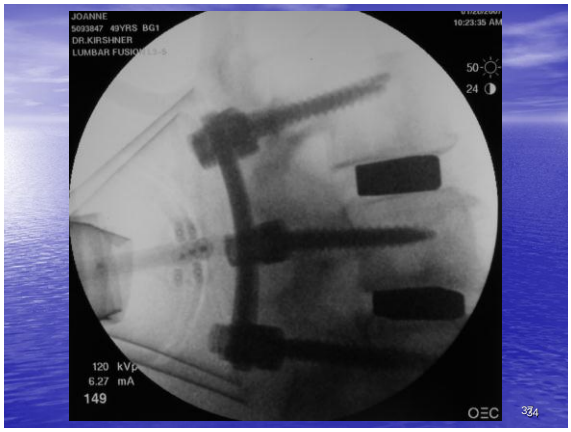
Retractor system

- McCoullough
- Tubular dilators

+/- Epidural Steroid







Benefits of MIS LS Fusion

- Long Term Outcomes of MIS vs Open TLIF: Surgical Results and Outcomes in a Series of 148 Patients
- LT Khoo, N Chen, S Armin

Summary

At 4 years, MIS-TLIF has become the standard of care for 1 and 2 level degenerative disease patients with improved benefits in this class II prospective non-randomized study:

- **Improved operative time + blood loss (p<.01)**
- **Improved peri-operative complications (p<.01)**
- **Improved 6 wk, 3 month pain scores (p<.01)**
- **Improved ODI scores at 3,4 years (p<.05)**
- **Decreased Global Costs (p<.01)**

Minimally invasive fusion techniques

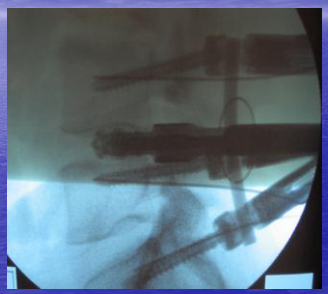
Advantages:

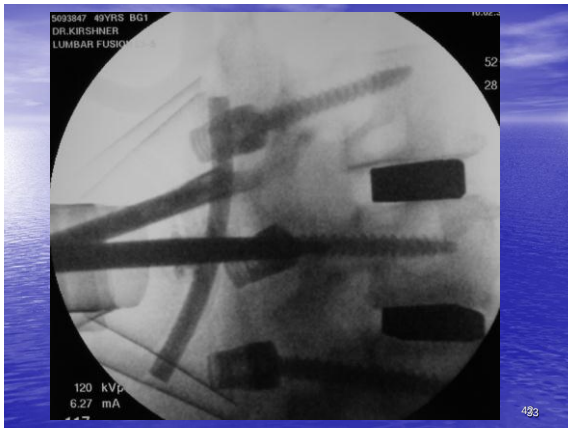
- –Smaller surgical incisions
- –Minimal muscle stripping
- –Less retraction
- –Less blood loss
- –Less post-operative pain
- –Shorter hospital stay
- –Earlier patient recovery

Operative Technique: Lumbar

- Fusions: Familiar with Instrumentation
- Bone grafts local/ BMA/ OP1/ Bone graft extenders

Minimally Invasive LS Fusion Technique





Operative Technique: CSF Leak

Cobb Elevator for Superficial Scar tissue
Epidural Sharp Dissection
Duracele
Dural Grafts
6.0 Nylon/ Micro Instruments

Post op Follow Up

Surgeon in area until Patient discharged
Low Threshold to transfer
Hospital -Surgeon
POD # 1 Call
Identification of problems
Direct communication with patient

History

Posterior cervical foraminotomies

History

Jr Stieber,et al Anterior cervical decompression and fusion with plate fixation as an outpatient, Spine Journal 5 2005

No C3-4

1-2 levels only

d/c with JP drain removed in office next day

ACDF with Plate Fixation in a Surgical Center

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Cases

- 53 total
  - Ages 31-59 avg=41.6
  - Male 27, female 26
- August 2005 until March 2007
- One level 10
- Two levels 34
- Three levels 9

23 Hour Stay

- Total 9/53 (17%)
- 4 single levels
- 4 double levels
- 1 three levels
- 2 for social reasons (child care)
- Smoking is an incentive for early D/C

Complications

- Partial Horners Syndrome
  - ACDF C5-6, C6-7
- TIA
  - Diabetic
  - 3 Level
  - 2 hrs post op
  - Transfer to hospital
  - Complete resolution of symptoms
  - Negative workup

Results

- Highest scores on patient satisfaction
- No pseudoarthrosis
- No infections
- No junctional syndromes

Anterior Cervical Surgery in an ASC

ACDF 13 single level
78 two level
30 three level
cADR 21 single level
2 two level
Revision Anterior Cervical 5

Surgeries Performed

Lumbar 103
Spinal Cord Stimulators 6
Minimally Invasive Lumbar Fusions 5

Billing

Get involved

Coding similar to Surgical

Keep your billing company updated of coding changes

Be careful of implant costs

Training of Spine Surgeon/Staff

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856-797-9161
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South Jersey Surgical Center
Mt Laurel NJ
Exit #4 on NJ Turnpike
20 min Philadelphia Airport