

**VEITH SYMPOSIUM**  
Connecting The Vascular Community

## Technical Tips and Tools For Safe Anterior Spine Exposures



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## Disclosures

- Silk Road Medical (TCAR)
  - National PI: ROADSTER-3
  - Site PI: ROADSTER and ROADSTER-2
  - Physician Education/Training/Certification
- Medtronic
  - Physician/Trainee Education
- Adiant/CyndRx/Endospan/Endoron/Nectero
  - Clinical Events Committee/Data Safety Monitoring Board
- UpToDate (royalties for topics)
  - Author, carotid and aortic aneurysm
- Intersocietal Accreditation Commission (IAC)
  - Member, Carotid Stenting Board
- No discussion of "off label" devices/techniques
- Opinions are my own and do not represent official societal/committee endorsements

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## Anterior Exposure For Spine Surgery

- Anterior approach for spinal surgery has become increasingly popular over the past two decades
  - Increased awareness of potential advantages
  - Higher number of patients w/aging population
  - Availability of fellowship-trained spine surgeons
- Ideal for involvement by a VASCULAR SURGEON!
  - Uniquely qualified for this procedure:
    - Comfortable w/retroperitoneal exposure and not afraid of blood vessels

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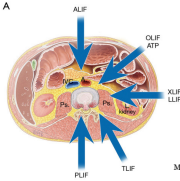
## How to Be a Successful Access Surgeon

- Objective as an "access surgeon" = delivery excellent service to your "customers"
  - Ensure safe and high quality care to the patients
  - Make sure spine surgeon is happy with the service
- Become a PARTNER with the spine surgeon
  - Understand their approach and speak their language
  - SAFE: minimize and avoid complications
  - EFFECTIVE: able to "adequate" exposure for intervention
  - TIMELY: availability; avoid lengthy operations

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## How to Be a Successful Access Surgeon

- **Preoperative "communication" regarding procedural plan**
  - Plan appropriate timing of procedure (...concomitant procedures)
  - Clear expectations of vascular surgery presence
- Know surgical approach
  - Anterior/oblique
  - # of levels (sequence)



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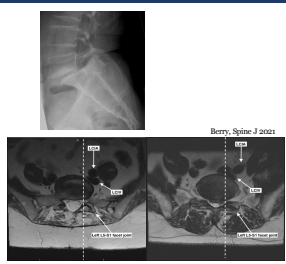
## Risk Factors for Complications

- Patients risk factors for complications
  - Obesity (BMI > 40)
  - Prior "abdominal" surgery (ureteral, retroperitoneal, colorectal)
  - Prior radiation therapy
  - Severe atherosclerosis (vessel calcification) w/prior vascular interventions (EVAR/stents)
  - Prior anterior lumbosacral exposure
- Normally meet patients on the day of surgery
- **Plan for preoperative evaluation in vascular clinic for select patients**
- Determine if there are any additional perioperative needs (consultants/procedures)

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### Risk Factors for Complications

- Spine-specific risk factors for complications
  - Increasing number of levels
  - Severe spondylolisthesis
  - Large osteophytes
  - Severe angulation of scoliosis
  - Osteomyelitis/"inflammatory response"
- **Carefully review preoperative imaging**
  - Review axial imaging (MR/CT)
  - Pay attention to vascular anatomy



Berry, Spine J 2021

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### Prepare for the Operation


- Appropriate equipment



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### Prepare for the Operation


- Appropriate retractor



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### Prepare for the Operation

- Prepare the patient
  - No need for CVC or arterial line
  - Foley catheter
  - Pulse oximetry – LEFT great toe
- Be responsible (available) for:
  - Patient positioning
  - Make sure retractor clamps accessible
  - Externally mark the patient (C-arm to help ID disc space)



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### Avoid (or Be Prepared for) Complications

- **Be aware of potential complications**
  - Vascular injury (vein injury during L4-L5 exposure)
  - Ureteral injury
  - Superior hypogastric plexus (retrograde ejaculation)
  - Sympathetic chain injury
  - Infection
  - Incisional hernia
  - Seroma/hematoma
  - Postoperative ileus/bowel injury
  - Lymphedema (leg swelling)
  - Deep venous thrombosis

**Technical Tips**

- Identify potential bleeding sources
- Extensive dissection to allow visualization
- Minimize stretch injury
- Avoid use of electrocautery

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### Tips for Success...

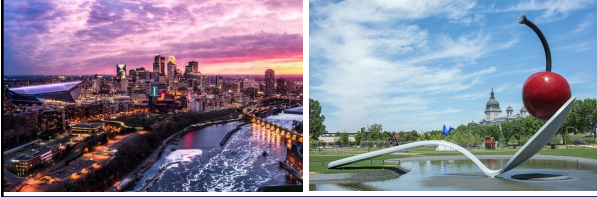


- To ensure procedural success...
  - Clear line of communication with spine surgeon
  - Identify patients at high risk for complications
  - Carefully review preoperative imaging to evaluate (vascular) anatomy
  - Have adequate surgical tools to allow safe careful exposure

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Thank you!

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