

# Failed Back Surgery Syndrome

FBSS a general term applied to those that have undergone at least one lumbar procedure without benefit. The cause varies widely and includes inadequate fusion or surgical decompression, pseudoarthrosis, recurrent disc herniation, secondary instability or related degenerative changes and complications of surgery. There are no definitive criteria for diagnosis.

## ANESTHETIC CONSIDERATIONS:

- Chronic pain patient
- Opioid dependence

## ANESTHETIC GOALS:

- Multimodal anesthesia
- Decrease in patient's pain, not resolution

## HISTORY

- The clinical hallmark is chronic postoperative pain
  - May be localized to axial (low back) or radicular distributions
  - Pain may be mechanical or neuropathic
- Frequently have coexisting MSK complaints
- Pain may be poorly defined and vaguely located in a non-physiologic distribution
- Medicolegal and psychosocial issues frequently coexist
  - Increased use of cigarettes and EtOH
  - Often have not completed higher education
- Frequent polypharmacy and opioid usage
- Multiple trials of rehab and physical therapy often without success

## PHYSICAL

- Thorough neurologic and MSK exams in particular to rule out more concerning diagnoses

## INVESTIGATIONS

- Plain radiography of L-spine (AP, lateral, oblique +/- flexion, extension views)
- CT – non-contrast
- MRI
- Myelography – combined with post myelogram CT provides the most definitive and precise visualization of nerve root anatomy and compression and remains the gold standard
  - Invasive and some risk of complications
- EMG
- Nerve conduction studies
- Nerve root injections and diagnostic blocks
  - Fluoroscopic or CT guided
  - Often diagnostic and therapeutic

## OPTIMIZATION

- Surgical revision
  - Goals are decompression of all compressed neural elements, restoration of physiologic balance and lordosis, stabilization of unstable segments with internal fixation and placement of graft material to facilitate fusion
  - Surgical revision for FBSS is very controversial
- Rehabilitation is critical in the acute stages of recovery from surgery
- Pain management
  - Pharmacologic management is effective
  - Long term narcotics are most commonly used
  - Antidepressants
  - Gabapentin
  - NSAIDs
  - Epidural steroid injections and nerve root or sympathetic blocks may be used as well
- Adjunctive Pain procedures
  - Spinal cord Stimulator
    - Usually considered for younger patients with unilateral leg symptoms
    - Usually a trial of stimulation is performed percutaneously then a more permanent catheter may be placed with a battery pack
  - Morphine pump implantation
    - Reserved for the most disabling and chronic conditions and should be considered a palliative measure to assist long-term narcotic therapy

## ANESTHETIC OPTIONS

## ANESTHETIC SETUP

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## MANAGEMENT OF ANESTHESIA

- Multimodal analgesia maximizing non-narcotic analgesics and regional techniques
- Will require larger/more frequent doses of opioids (see opioid dependency seminar)

## DISPOSITION & MONITORING

## COMPLICATIONS

### PATHOPHYSIOLOGY

- Causes of Chronic Pain in patients with FBSS
  - Residual neurologic compression
    - Persistent nerve root compression following attempted decompression is a frequent cause of pain
    - Can be technically challenging
  - Spinal instability
    - Seen with listhesis of 1 vertebral body on another
    - Incompetency of facet joints is quite common post-laminectomy
  - Neurophatic injury
    - Chronic nerve root compression and irritation, manipulation of the nerve root and post-op instability may all contribute
    - “Battered nerve root syndrome”
    - Best treated by medications or insertion of spinal stimulators or morphine pumps
    - Surgery may also cause arachnoiditis causing clumping and distortion of the nerve roots
  - “Fusion Disease”
    - Development of tight, painful muscles following insertion of pedicle screw fixation
    - Loss of lumbar lordosis and chronic muscle spasms

### REFERENCES

- Onesti, Stephen T. Failed Back Syndrome. *The Neurologist* 2004, 10: 259-264.
- Anderson, Valerie C. et al. Failed Back Surgery Syndrome. *Current Review of Pain* 2000, 4:105-111.