Interventional Procedures for Non-Surgical Back Pain

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Fellowship-Trained in Chronic and Interventional Pain
Objectives

1. Give overview of burden of back pain from macro economic level to micro personal level.

2. Discuss non surgical interventional techniques for upper and lower back pain.
About Me

• Medical School: Chicago Medical School
• Internship: Case Western
• Residency: Anesthesiology @ University of Pittsburgh Medical Center
• Fellowship: Chronic Pain University of California San Diego
• Clinical Interests: Interventional Spine procedures, back pain after surgery, percutaneous, neuromodulation
• Pearl the Pitbull
Financial Cost of Neck and Back Pain

• 2016 Article by *Journal of the American Medical Association* (JAMA) on United States (US) health care spending, revealed that low back and neck pain accounted for the third highest amount of spending at $87.6 billion

• 9.4 billion dollars spent on inpatient stays for lower back pain

• 7.3 million ER visits for lower back pain

• 2.3 million hospital inpatient stays

• 1993-2008 number of hospital stays for lower back pain doubled
Side effects of chronic pain...

- Depression affects up to 40-60% of patients with chronic pain.
- Chronic pain patients are 6X more likely to have depression than adults with out chronic pain.
- Thoughts of suicide or suicidal ideation occur in up to 50% of patients who have chronic pain.
- The rate of suicide is 2-3 x more likely in those with chronic pain than the general population.
How I treat patients

• Physical Therapy
• Psychology services
• Complimentary alternative therapy
• Medication mgmt.
• Interventional procedures
Today’s Pain Physician
“Pain is an unpleasant sensory and emotional experience that is associated with actual or potential tissue damage or described in such terms.” International Association for the Study of Pain
How I help surgeons be more effective and patients get pain relief

A. Illustration of distribution of lumbar facet joint pain.
One of our patients ...

- Mrs. California 68 years young ...
- PMhx of afib, COPD, hypothyroidism etc ...etc..
- She’s on blood thinners, metformin and three blood pressure medications...
- She has back pain that is in her lower back, it is below and above the waistline, she has a lot of pain when she swings her golf club. When she plays golf, she often walks the course with her friends.
Facet joint mediated pain
Our patient continued

- Unfortunately our patient’s husband was also having back pain around the same time and saw a surgeon who performed a multi-level laminectomy and posterior instrumentation.
• He continues to have pain in his back ...
• His pain is now more sporadic than before
• His pain has now spread farther up and farther down than it was before.
• Mrs. California privately told me that she has been noticing a change in his mood, he doesn’t enjoy playing with his grandchildren as much any more, has been drinking more for pain relief and is now on opioid medications.
Failed Surgical Back Syndrome
Team Based approach to his management

- Psychologists...
- Acupuncture therapists...
- Mediation mgmt.
- Interventional procedures
Neuromodulation

• First performed in 1967
• Is now a much earlier used therapy in the treatment of chronic pain.
• Does anyone know how it works?
Gate Control Theory

Inter-neuron inhibition
Our story continues

• Mrs. California is now 78 years young
• She’s on blood thinners, metformin and three blood pressure medications
• Back pain, no previous surgeries, can only stand for 15 minutes, she has a hard time grocery shopping now because her butt starts to hurt, and she has to ride in a golf cart now and can’t walk her favorite courses
• She can’t really pin point one area of pain
Lumbar Spinal Stenosis w/ NIC

- 2% of the population under 50
- 10% of the population 60 and older
- #1 cause of neuropathic spine pain in the elderly.
- Can be caused by multiple different etiologies:
  - Hypertrophic ligamentum flavum
  - Central canal narrowing
  - Bulging disc
  - Lateral recess narrowing
  - Foraminal narrowing
  - Facet hypertrophy
  - Facet arthropathy
Two outpatient procedures that can be done with just local anesthesia

<table>
<thead>
<tr>
<th>MILD Procedure by Vertos</th>
<th>Superion Spacer by Vertiflex</th>
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</thead>
<tbody>
<tr>
<td>• Percutaneous indirect lumbar decompression</td>
<td>• 5 year data</td>
</tr>
<tr>
<td>• &gt; 20 thousand patients treated</td>
<td>• Changes that occur in the spine include increased:</td>
</tr>
<tr>
<td>• 13 clinical trials</td>
<td>– Canal area</td>
</tr>
<tr>
<td>• Published in over 20+ peer reviewed journals</td>
<td>– Canal diameter</td>
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<tr>
<td></td>
<td>– Sub-articular diameter</td>
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<tr>
<td></td>
<td>– Foraminal area</td>
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<td>– Foraminal width</td>
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MILD Procedure
Mean walking distance at each follow-up

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Presenting Spinal Comorbidities % (n)</th>
<th>ODI Response Rate* at 2 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ligamentum flavum hypertrophy</td>
<td>100.0% (149)</td>
<td>72.4%</td>
</tr>
<tr>
<td>Bulging disc</td>
<td>89.9% (134)</td>
<td>77.3%</td>
</tr>
<tr>
<td>Foraminal narrowing</td>
<td>87.2% (130)</td>
<td>73.8%</td>
</tr>
<tr>
<td>Facet hypertrophy</td>
<td>86.6% (129)</td>
<td>76.8%</td>
</tr>
<tr>
<td>Facet arthropathy</td>
<td>76.5% (114)</td>
<td>72.7%</td>
</tr>
<tr>
<td>Degenerative disc disease</td>
<td>67.8% (101)</td>
<td>74.3%</td>
</tr>
<tr>
<td>Disk space/height loss</td>
<td>59.1% (88)</td>
<td>79.3%</td>
</tr>
<tr>
<td>Lateral recess narrowing</td>
<td>57.0% (85)</td>
<td>76.3%</td>
</tr>
</tbody>
</table>

*Percent of patients achieving ODI improvement of ≥10 points.
Your Lucky Day

PALOMAR HEALTH
Orthopedic & Spine Center

Graph 1: Oswestry Disability Index (%)
- X-axis: Followup Interval (mos)
- Y-axis: Oswestry Disability Index (%)

Graph 2: VAS Leg and Back Pain (mm)
- X-axis: Followup Interval (mos)
- Y-axis: VAS Leg and Back Pain (mm)

Legend:
- Blue: VAS Leg
- Black: VAS Back
Interspinous Process Decompression is Associated with A Reduction in Opioid Analgesia in Patients with Lumbar Spinal Stenosis

Pierce D. Nunley, M.D.¹, Timothy R. Deer, M.D.², Ramsin M. Benyamin, M.D.³, Peter S. Staats, M.D.⁴, Jon E. Block, Ph.D.⁵

Journal of Pain Research

Results

1. At baseline, almost 50% (94 of 190) of subjects were using opioid medications.
2. There was a sharp decrease in opioid medication prevalence from:
   - 25.2% (41 of 163) at 12 months
   - 13.3% (20 of 150) at 24 months
   - 7.5% (8 of 107) at 60 months
3. Between baseline and 5 years, there was an 85% decrease in the proportion of subjects using opioids.
4. Decreased opioid medication usage was also observed among the sub-group of subjects with a history of opiates prior to entering the trial.

Conclusions

Stand-alone IPD is associated with a marked decrease in the need for opioid medications to manage symptoms related to LSS. This finding extends previous results with IPD showing long-term sustained clinical improvements, a reduction in symptoms of neurogenic claudication and a decreasing requirement for revision surgery in this population.

In light of the current opiate epidemic, alternatives such as IPD, may provide effective pain relief in patients with LSS without the need for opioid therapy.
Thank You!
Questions?
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