Interventional Pain Management

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2016
Introduction

- Multiple Stakeholders
  - GP
  - Physiotherapy
  - Surgery
  - Radiology
  - Oncology

- First described in 1899 Von Gaza (procain)
- Grew out of necessity
- Heretofore empiric
- Evidence base growing only recently
Regional

- Popularised by Winnie 1950s
- Later adapted by Bonica for Chronic Pain
- Mechanism of action........
Trigger Point injection

• Taut band
Facet intervention

• Injection of corticosteroid into joint.....
• Bogduk’s approach
• Median branch block
• ?placebo blind injection
• Metanalysis of radiofrequency neurotomy
• 50-80% 1 year relief
Surgery

• Decompression
• Discography
• Fusion
• Disc Replacement
• QALY $70000
Interventional Pain Management

- Epidural steroid injection
  - Short term benefit
  - Radicular pain
  - Spinal stenosis
  - No evidence of benefit for axial low back pain

- Transforaminal
  - Anterior delivery of steroid
  - Cord infarction

- Intralaminar

- Caudal
Interventional Pain Management

- Objective – pinpoint source of pain
- If lesion cannot be treated – target nerve supply
- Zygapophyseal Joint
  - Controlled diagnostic block of the medial branches
  - Percutaneous medial branch neurotomy
- Dreyfuss (2000)
  - 80% relief at 1 year for 60%
  - 60% relief at 1 year in 80%
Medial Branch Neurotomy

<table>
<thead>
<tr>
<th>Study</th>
<th>Level of Evidence</th>
<th>Medial Branch Blocks</th>
<th>Controlled Blocks</th>
<th>Surgical Technique</th>
<th>Better than Sham</th>
<th>Success Rate</th>
<th>Pain Relief</th>
<th>Improved Disability</th>
<th>Reduced Analgesics</th>
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</thead>
<tbody>
<tr>
<td>van Kleef et al. [63]</td>
<td>II</td>
<td>Yes</td>
<td>No</td>
<td>Partially valid</td>
<td>Yes</td>
<td>47%</td>
<td>Yes</td>
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<td>Tekin et al. [65]</td>
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<td>Nath et al. [64]</td>
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<td>Dreyfuss et al. [56]</td>
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<td>Yes</td>
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<td>Gofeld et al. [57]</td>
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<td>Burnham et al. [58]</td>
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<td>Partial*</td>
<td>Valid</td>
<td>43%</td>
<td>Yes</td>
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* The study of Burnham et al. [58] required a positive response to both a medial branch blocks and an intra-articular block. Levels of Evidence: I: Systematic review of controlled trials, II: randomized controlled trial, III: case-control study, IV: descriptive outcome study.
Perils of diagnostic blockade

- Variable patient anatomy
- Inaccurate or incomplete nerve block
- Systemic LA effects
- Placebo response
- Patient/doctor communication issues

Bogduk’s approach: targeted blinded short and long-acting LA and placebo blocks
Sacroiliac Joint

- Diagnostic block
  - 15 to 20% of chronic low back pain
- Successful treatment difficult
  - Conservative therapies
- RF of lateral branches of the dorsal sacral rami
  - 50% relief at 1 month for 80%
  - 50% relief at 6 months for 60%
  - 50% relief at 12 months for 10%

Cohen et al Anaesthesiology
Sacroiliac joint

- RF Lesioning
- Thermal
- Cold RF
Epidural adhesiolysis

- Presumed epidural adhesion
- Epidural endoscope
- Complications potentially devastating
Intradiscal therapies

• Intradiscal electrothermal therapy (IDET)
• Conflicting evidence
• Percutaneous disc decompression
• Percutaneous laser discectomy
• Methylene blue
Vertebral augmentation

• Vertebroplasty
  • Percutaneous PMMA injection into vertebral body fracture
• Kyphoplasty
  • Similar but balloon tamponade is placed first in vertebral body
Spinal cord stimulation

- Failed back surgery syndrome
- CRPS
- Well supported by the evidence for long term relief
- Cost effective
- Adverse events in 34%
High Frequency Stimulation

• 40-60 Hz
• High frequency 10,000Hz
• No paraesthesia
• Initial data suggests more effective n=171
• 50% reduction in pain in 85% Vs 56% for convention – particularly for back component
• Burst alternative
DRG stimulation

- Targets specific region
- Low energy use/less lead migration
- CRPS
- Neuropathic pain
- PPSP
Wireless stimulation

- Stimwave
- External power source
- Offers high frequency and convention
- Not yet available
Deep Brain Stimulation

- Central stimulation
- Used in Parkinsons
- Cancer pain
- Chronic pain
Implanted intrathecal drug delivery

- Evidence conflicting
- Weak at best
- Appears cost effective
- Indicated as a ‘salvage’ therapy
Pain Clinic

• Interdisciplinary
  • Psychology
  • Physiotherapy
  • Occupation therapy
  • Pain Medicine
• Inpatient treatment expensive
• Outpatient brief intervention gaining favour
“I think the dosage needs adjusting. I’m not nearly as happy as the people in the ads.”
Scientific Method, Evidence-based Medicine and Rational Use of Interventional Pain Treatments


• Ten year delay to confirm or refute value of an intervention
• Constantly expanding array of options ...that should provide pain relief
• Evaluate each patient and provide compassionate and rational therapies
Staying out of trouble

• Avoid expectations of “quick fix”
• Clarify patient expectations
• Beware the enthusiastic referrer
• Communicate clearly about treatment goals
• Emphasize consultative role
Areas to interest

• Coamoxiclav for discogenic pain
• Modic 1 changes
• Ibudilast (PDE inhibitor)
• Minocycline