Outline

- Existing definitions of Pudendal Neuralgia
- Anatomy
- Clinical Presentation
- Diagnosis Criteria
- Evidence Based Medicine and Physiotherapy
- Psychological considerations
- Case Study
  - Issues faced re: recognition of Pudendal Neuralgia
What is Pudendal Neuralgia?

- Neuropathic pain
- Distribution of the Pudendal nerve
- Urinary, rectal and sexual dysfunction
- No pathology or infection
- Neuralgia – “severe, sharp pain along the course of a nerve” (Benson & Griffis, 2005)
- Associated names
  - Pudendal nerve entrapment
  - Pudendal pain syndrome (Fall, et al., 2010)
- Syndrome V’s Diagnosis (Stav, Dwyer & Roberts, 2009)
Potential causes

- Nerve entrapment/compression (Robert et al., 2005; Stav, Dwyer & Roberts, 2009)
  - Between sacrotuberous & sacrospinous ligaments
  - Alcock’s canal
    - Falciform process of sacrotuberous ligament/obturator internus fascia thickening
  - Nerve responds via inflammation or becoming scarred and thickened
- Repetitive micro-trauma E.g. cycling
- Mechanical stretching I.e. chronic constipation
Potential Causes cont’d…

  - Decreased perfusion at 8% stretch
  - Complete ischaemia at 15% stretch
- Infectious damage to the nerve by Herpes Simplex (Stav, Dwyer & Roberts, 2009)
- Hypothesis: hypertrophy of PFM’s can result in elongation and remodeling of the ischial spine (Antolak, Hough, Pawlina, & Spinner, 2001)
Ventral aspect of 2\textsuperscript{nd}, 3\textsuperscript{rd} and 4\textsuperscript{th} ventral sacral rami

Lies medially and caudally to sciatic nerve

Greater sciatic foramen

Between Piriformis and Coccygeus

Enters gluteal region

Courses between the sacrotuberous and sacrospinous ligaments near the ischial spine

Re-enters pelvis through lesser sciatic notch and Alcock’s canal -

OI fascia and lateral wall of ischio-anal fossa
Anatomy

(Anatomedia, 2010)
With Alcock canal, nerve gives off:
- Inferior rectal nerve
- Perineal nerve – Deep motor and 2 superficial sensory branches
- Dorsal nerve of the penis/clitoris

Depth and location (Uz, et al., 2005)
- Ischial tuberosity – coccyx 8.62cm +/- 0.92cm
- Ischial tuberosity – Ischial spine 5.23cm +/- .33cm
- Ischial spine – coccyx 5.42cm +/- 0.52cm
- Nerve depth – 4.14cm +/- 0.83cm
Anatomy
Conveys sensory, motor and sympathetic fibres to the perineum

Innervates:

- Transversus Perinei Superficialis & Profundus
- Bulbospongiosus
- Ischiocavernosus
- Sphincter Urethra

Anterior aspects of:

- External Sphincter
- Levator Ani
Clinical Presentation

Alternative diagnoses:
- Prostate pain syndrome/Prostatitis/Prostatodynia
- Testicular pain syndrome
- Anorectal pain syndrome
- Perineal pain syndrome
- Vulvodynia
- Chronic Pelvic Pain
- Levator Ani syndrome
- History of surgery common

(Fall, et al., 2010; Markwell, 2001; Robert et al., 2005)
Symptoms

- Numbness, burning, allodynia
- Aggravated by sitting/Relieved by standing
- Aggravated by prolonged hip flexion activities
  - Climbing, squatting, cycling
- Voiding and sexual dysfunction/pain
- No nocturnal perineal pain
- Generally unilateral
- Associated muscular pain – trigger points
  (Antolak, et al., 2001; Fall, et al., 2010; Labat, et al., 2008; Markwell, 2001; Rhame, Levey & Gharino, 2009; Robert, et al., 2005; Stav, Dwyer & Roberts, 2009)
Symptoms cont’d…

- Normal imaging
- Pain unresponsive to usual analgesics
- Normal neurological examination
- Pain on rectal palpation of ischial spine
- Poor sacro-pelvic stability
- PFM hypertonicity
- ICS definition
  - Females – Perineal pain is felt between the posterior forchette and the anus
  - Males – Between the scrotum and the anus
Symptoms cont’d...

- Retrospective study of 64 patients (Benson & Griffis, 2005)
- Pain along nerve distribution – 100%
- Pain aggravated by sitting – 97%
- Pain relieved by standing/lying – 89%
- Previous misdiagnosis – 83%
- Demyelination – 26%
5 suggested diagnostic criteria

- Pain along the anatomical distribution of the PN
- Pain aggravated by sitting
- Patient not awakened at night by pain
- No objective sensory loss
- Pain improved by an anaesthetic PN block

Exclusion – coccygeal/gluteal pain; presence of imaging abnormality; dermatological lesion
Pudendal Nerve block (Antolak & Antolak, 2009; Uz, et al., 2005)

- Evaluative
- Analgesic
- Transvaginal/Transrectal technique
  - Palpation of sacrospinous ligament
  - Administered at level of ischial spine and Alcock’s canal
- 2-3 blocks over 3-6 months
- 90% improvement in symptoms 12-26 months
Sacral Neuromodulation (Fall, et al., 2010)
- Blocks pain transmission in the spinothalamic tract
- Activates descending inhibitory pathways
- Effects central sympathetic systems
- Provides segmental inhibition
- Masks nociceptive output

Pharmacologic treatment
- Gabapentin, Endone, Tricyclic antidepressants
EBM cont’d…

- **Botox** (Gajraj, 2005)
  - Case report
  - Botulinum Toxin injection to OI to address chronic perineal pain - OI considered a pain generator
  - 64 year old female
    - Right sided upper leg, vaginal and rectum pain
    - Aggravated by sitting
    - Numerous prior diagnosis
    - Prior treatment failed
    - Bupivacaine 5ml 0.25% gave 90% relief for 12 hours
    - 2\(^{nd}\) injection, 3ml 0.25%
EBM cont’d…

Botox cont’d…

- Pain reduced from 7/10 to 1/10
- 90% maintenance of relief 3 months after 2nd injection

Mechanism

- Inhibits acetylcholine and pain neurotransmitters such as Substance P, Glutamate and Histamine
- Decreases local sensitisation
- Diminishes activity in gamma motor neurons

Complications: Incontinence
EBM cont’d…

- **Surgery** (Robert et al., 2005)
  - Non-blinded RCT comparing de-compressive surgery with non-surgical treatment
- **Control group**
  - Previous positive temporary response to PN blocks at ischial spine/at Alcock’s canal
  - Physiotherapy
- **Surgery group**
  - As above
  - Trans-gluteal approach
  - Pudendal neurovascular bundle released by incision of offending tissue
EBM cont’d…

Surgery cont’d…

Results

- Significant improvement at 3 months and 12 months compared with control group
- Improvement maintained 4 years later in 50% of surgical participants

Are further medical interventions required?

Other studies assessing surgery

Shafik (1998)
Physiotherapy

- Little evidence
- Paper by Markwell (2001)
- Physiotherapy aims
  - Alter/facilitate motor and cognitive learning
  - Restore pelvic floor muscle coordination and symmetry
  - Assist in central processing changes
Physiotherapy cont’d…
(Markwell, 2001)

Suggested interventions

- Defecation training
  - Relaxation
  - Voiding postures
  - Constipation management
- PFM training
  - Relaxation/motor learning
  - Stretches
- Re-training of sacro-pelvic deep stabilisers
Physiotherapy cont’d...

- Anecdotal
  - Trigger point therapy internal and external
- Postural management
  - Unilateral hip flexion/ER
  - Contra-lateral hip extension
  - +/- iliac compression/gluteal distraction
  - Sitting postures
- Sexual retraining
  - Pacing
  - Dilators
  - Arousal
Manual Therapy/Chiropractic

Case based study (Durante & MacIntyre, 2010)

- 41 year old ironman
- History long distance cycling
- Constant penis pain/pain after intercourse
- Twice weekly treatment for 4 weeks
  - Rest and Naproxen decreased pain to 5/10, but pain re-exacerbated with cycling
  - OI release – Active Release Technique
  - Pain decreased from 9/10 to 1/10 at 4 weeks
  - Pain resolved after 12 weeks
Durante and MacIntyre (2010) cont’d…

Further considerations:

What does the technique specifically involve?
Was it performed externally or per rectum?
Were associated techniques used? I.e. relaxation, stretching, cycling modification?
Psychological Considerations

- Persistent Pain (Rahme, Levey & Gharibo, 2009)
  - Altered processing of pain signals = central sensitisation
  - Pain related behaviours/attitudes
  - Decreased function/feelings of self worth
- Disruption of daily life (Fall, et al., 2010)
41 year old female
4 year history of pain
Aggravating factors
  Sitting
  Lifting
  Lying on back
  Vibration I.e. Car
Toothache in nature
Eased by prone lying/postural changes
Case Study cont’d…

- Reported bladder pain without UI
  - Cleared of IC
- Bowels
  - Pain with defecation, without constipation
  - Diagnosed with IBS
- Self employed graphic designer
  - Closed her business due to lack of ability to sit
- Traumatic event
Past medical history
- Removal of recto/vaginal septum and liberation of left utero-sacral ligament // Improvement in pain
- 2009 - Laparoscopy to release bowel adhesions
- 2011 – Peripheral Field Stimulator Implant after a successful trial 4 weeks earlier

On presentation to Royal Women’s
- 15 Medical practitioners
- 11 allied health/complimentary therapists
Case study cont’d…

- Initial assessment (objective)
  - Tenderness on palpation of right OI (internally and externally), LA, PC. Increased patients pain, then decreased.
  - Ileum compression using a belt assisted in pain management – Relieve pressure from pudendal nerve
  - Management – Use of belt, education regarding condition, postural education
Case Study cont’d…

- 2 week review
  - Driving possible
  - Belt assisting with pain
  - Pain over rectal branch distribution remained

- 6 weeks after initial review
  - Able to sit in Draftsman’s chair
  - Able to generally sit/stand/lie supine ~ 1 hour
  - Management –
    - Alexander relaxation technique/ LA TP’s
    - Burning over rectal branch remained
    - Trial Ice/Neurofen
Case study cont’d…

- 15 weeks after initial session
  - Pain much improved
  - Belt continued to help
  - Husband incorporated into exercises
    - External OI TP techniques explained
    - Postural relief
      - Supine
      - Hip flexion/ER of symptomatic side
      - Hip extension contra-lateral side
      - Iliac compression
      - Gluteal distraction
  - PN block test to assist diagnosis/management
Case Study cont’d…

- 18 weeks after initial session
  - Had 2 hours of relief from pain daily
  - Able to pace sitting times
  - Decided to submit an impairment claim to Workcover
Patient’s perspectives

- Barriers faced by PN sufferers with Workcover
  - Delay in diagnosis – past initial 130 days. Therefore classed as long term case
  - Decreased contact and support
  - Questionable suitability of members of the medical panel – No neurologist
  - Diagnosed with “chronic pain condition”
  - No recognition of neuropathic pain according to 1958 act.
  - Not provided with any capacity
Workcover barriers cont’d…

- Requested Neurologist referral – Uneventful, condition considered gynaecological after success with previous surgery
- Approval for implant declined – self funded
- Referred to AF
  - Not recognised by workcover, funding declined
- Current suspended claim
  - Initial injury not attributed to current symptoms (?)
Patient Perspectives cont’d

- Breakthroughs
  - PN block injections assisted diagnosis
    - Clear MRI
  - Epworth Pain Clinic
    - Feldenkrais techniques
    - Alexander relaxation method
- Meeting AF
  - Education
  - Recognition
  - Listened to
  - Assisted in possibility of RTW 1 hour daily
Currently

- Medical panel – Stimulator still required? AF still required (although attending publicly).
- Submission of Impairment claim
- Deemed unfit (no capacity) once again – potential removal of aids
Conclusions

- PN has several mechanisms with defined symptoms
- Recommendations for diagnosis
- Ideal management for PN not yet defined
- Limited physiotherapy studies
- Few high quality medical studies - surgical
- Main barrier for patients
  - Diagnosis/Recognition of the condition
  - Limitation of resources
Recommendations cont’d

- Increase public resources
  - Website
  - Forum
  - Associated symptoms – Awareness through CFA and other bodies
Recommendations

- **Research**
  - Symptom classification for physiotherapists
  - Refined medical diagnostic criteria
  - Comparative studies
    - Postural management V’s TP’s
    - Physiotherapy +/- CBT
    - Post surgical Physiotherapy V’s no physiotherapy

- **Barriers**
  - Participant numbers and recruitment
  - Often diagnosed later – Co-existing factors such as central changes
References


References


