
May 2020  Pelvic Physiotherapy Distance Journal Club

I. Introduction:
   A. Endometriosis:
      a. Affects reproductive age women
      b. Pain and severity of disease are not directly correlated.
   B. Chronic pain
      c. Sensitization clinical manifestations
         1. Regional allostynia
         2. Regional hyperalgesia
      d. Regional pain syndromes with regional hyperalgesia and allostynia
         1. Endometriosis
         2. Migraine
         3. Fibromyalgia
         4. Painful bladder syndrome
         5. Irritable bowel syndrome
         6. Overlapping pain syndromes
      e. Pain: myofascial trigger points (MTPs)– palpable nodules
         1. Patients with endometriosis present with abdominal wall MTP
         2. Rat endo- vaginal hyperalgesia and abd MTPs
   C. Population:
      f. Women with chronic pelvic pain (CPP)/healthy volunteers
      g. Laparoscopy for pelvic pain group to rule in/out endo and treat existing lesions
      h. Psychosocial and quality of life measures assessed for all participants.

II. Materials and Methods
   A. Participants:
      a. Inclusion criteria:
         1. women between 18 and 50
         2. with sx suggestive of endometriosis to include: dysmenorrhea, dyspareunia, non-menstrual pain x 3-6 mths
         3. divided between pain with dx’d endo, chronic pain without endo, healthy participants
         -After 1 month in study those with chronic pelvic pain had laparoscopic excision of suspicious lesions/dx of endo confirmed by histology
         4. pregnant, regular menses, no hormonal treatment, no recent surgery, overall healthy.
      b. Exclusion criteria
         1. pain from other causes to include: infections, thyroid disease, autoimmune diseases, GI disease, fibromyalgia
         2. abnormal renal or liver function
   B. Assessment
      a. Self reported/structured interview to include- headaches, depression, abuse, sexually transmitted diseases, gynecologic conditions
b. Menstrual calendar reviewed

c. Physical exam

1. GYN- pelvic exam- levator spasm,
   - Laboratory assessment – gonorrhea, chlamydia; BIW assessment of estradiol, Progesterone; luteinizing hormone kit
2. Physiatrist- comprehensive neuro-muscular assessment during follicular phase (ends with ovulation); included:
   - clinical signs of sensitization
   - measurement of local tenderness/pressure over supraspinous ligament, clinical signs of myofascial dysfunction (points of interest- paired muscles to include: iliacus, external oblique, rectus abdominis, adductor longus, adductor magnus, vastus medialis, gluteus maximus, measurement of pressure -pain threshold of muscles (measured with pressure algometer)
   - allodynia (pinch roll technique) vs hyperalgesia (using Wartenberg pinwheel vertically along skin by spinous process) – DX’d with condition with 6+ positive areas

   “Sensitization was defined as the presence of either regional allodynia or regional hyperalgesia.


D. Assessment tools

a. Pain assessment tools: visual analog scale (VAS) > 4/10 was considered as active pain
b. Duke Health Profile
c. Endometriosis Health Profile

E. Data analysis

a. described by frequency distributions and simple descriptive statistics, reported as percents or means +/- standard deviation
b. Fisher’s exact tests
c. Kruskal-Wallis or Jonckhere-Terpstra test
d. Analysis of variance (ANOVA)
e. post-hoc tests corrected by Bonferroni adjustment
f. Abelson-Tukey linear contrast ANOVA– trends based on continuous variables
g. Logistics regression modeling adjusted for group variables
h. Results reported as Odds Ratio (OR) or 95% confidence interval (CI)

   “Post hoc analysis showed the study was adequately powered. “

III. Results

A. Population:

a. 18 with biopsy-proven endometriosis with pain
b. 11 with CPP with pain only
c. 20 healthy volunteers
d. 36 non-Hispanic Caucasian, 9 non-Hispanic Black, 3 Asian, 1 Hispanic
e. No difference between groups re: age, BMI, race, ethnicity

B. Analysis:

a. History of abuse is significant, chronic pelvic pain only reporting highest incidence
b. Over 2/3 with CPP had history of migraine headaches, those with migraines – increased
likelihood of sensitization
c. Subjects with deep infiltrating lesions or moderate to severe disease had no more sensitization than those with superficial lesions or mild disease.
d. 10 women reporting abuse history, had similar sensitization, regardless of groups
e. Biopsy proven endometriosis group – pain over 4 in last month, levator spasm more common than pain only for healthy group (61% vs 36% vs 0%.)
f. Regional allodynia – regardless of pain source, more common than healthy subjects
  
g. Regional hyperalgesia – more common in biopsy-proven endometriosis
h. Women in CPP group had lower pressure pain threshold than healthy subjects
  
i. Clinical sensitization prevalent in both CPP groups (83% vs 82%) compared to healthy subjects (15%)  (Table 2)
j. Myofascial trigger points – average pressure-pain-threshold was significantly higher in both pain groups (Appendix 3)
k. 87% with levator spasm had myofascial dysfunction; 45% with myofascial dysfunction had levator spasm
l. Table 3: Regional alodynia and regional hyperalgesia- highest prevalence in CPP with any history of endometriosis/higher prevalence of sensitization
m. Group with any history of endometriosis had lower muscle pain-pressure thresholds
n. Table 4/figure 2: summation of Endometriosis Health Prfirl-30 and Duke Health Profile-current biopsy -proven endometriosis had worst scores l depression and anxiety with increased likelihood of sensitization
o. Biopsy-proven endometriosis participants presented with increased fatigue/achiness.

IV. Discussion
  
Main points:
A. Pain patients had higher evidence of sensitization, those having evidence of endometriosis were more likely to show signs of sensitization and myofascial trigger points
B. Suggestion- “Long-term remodeling of the central nervous system (resulting in alodynia, hyperalgesia, and myofascial dysfunction) may persist after lesions are treated in women with history of endometriosis.”
C. Central sensitization: produced by persistent noxious stimuli which changes the response to stimuli in the Central nervous system through distortion and amplification of pain.
D. Abdominal pelvic skeleton muscle involvement occurs when spinal cord involvement occurs.
E. Visceral disease occurs in 90% of women with myofascial trigger pints, was absent in 64% without palpable myofascial trigger points.
F. Study Strengths:
  a. No patients had hormones or recent surgery for endometriosis.
  b. Women had regular menses
  c. all women with pain had diagnostic laparoscopy
  d. neuromuscular assessment was restricted to follicular phase
  e. physiatrist was blinded to study cohort; had expertise in neuro-musculoskeletal assessment
G. Study limitations:
  a. Only one healthy participant was confirmed not to have endometriosis
b. Women with pain-free endo were not recruited
c. Groups and subgroups were small
d. Numbers limited of those with pain, no endometriosis
e. Self-reported data was used for depression, abuse, and anxiety
f. Catastrophizing was not assessed

CONCLUSIONS: Pain experience may be better described with neuro-musculoskeletal assessment giving objective findings of allodynia, hyperalgesia, pressure-pain-threshold and myofascial trigger points. This tool may assist with determining sensitization, which is otherwise difficult to corral. Traditional methods for assessing pain are inadequate, being replaced by mechanism-based evaluation.

QUESTIONS:
1. Do you feel that the conclusions regarding endometriosis and sensitization can be made with this particular sample size?
2. What are your thoughts about the statement that women with endometriosis are likely to have sensitization? How prevalent is this in your practice?
3. Do you agree with the statement about myofascial trigger points being hard, palpable, discreet and localized? (There is no mention of referred pain.)
4. A physiatrist performed the neuro-musculoskeletal assessment. What are your thoughts about this assessment?
5. What have you found to be the best clinical tools for assessing patients with endometriosis/CPP?
6. Are you documenting central sensitization or allodynia vs hyperalgesia in your notes/billing?


ICD10 codes for pelvic pain:
1. Pelvic pain - R10.2
2. Poor coordination - R 27.8
3. Central sensitization – G89.0
4. Disorder of central nervous system – G90.8
5. Other specified noninflammatory disorders of the vagina - N89.8