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The Tapestry of Chronic Pelvic Pain: Hysteria vs. Hysterectomy

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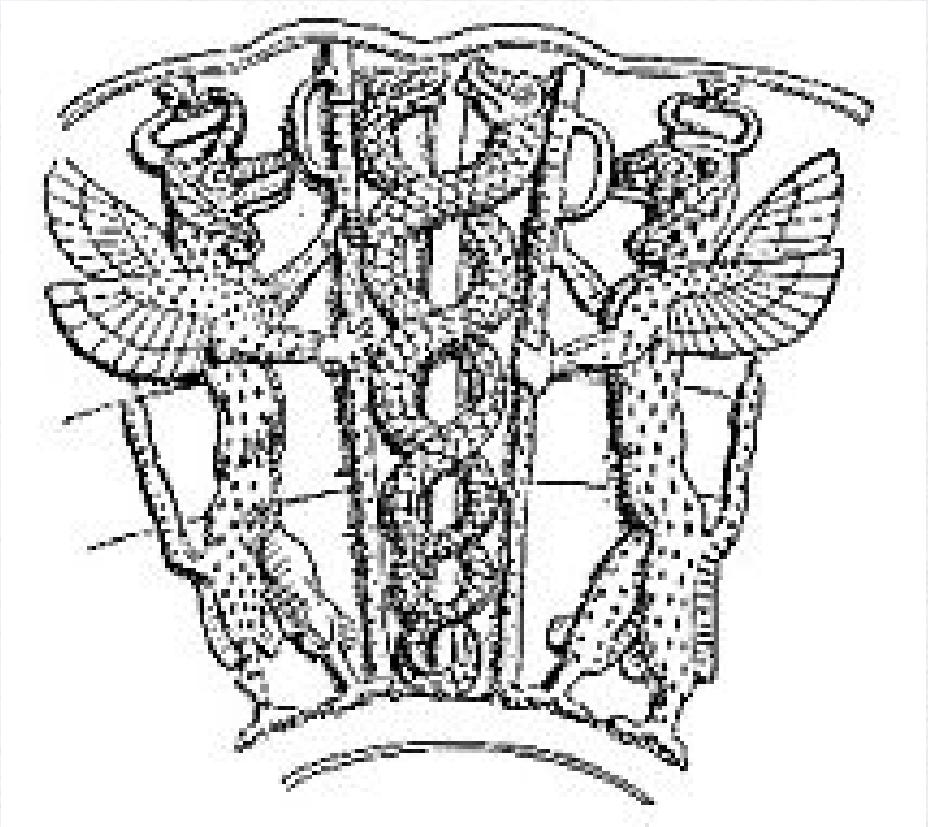
Overview

- Brief history of gynecology
- Connection between gynecology and mental health
- Chronic pelvic pain
- Chronic pelvic pain and mental health
- Discussion of current research

History of Gynecology

- Gynecology has traditionally been a surgical specialty
- Many nineteenth century gynecological techniques grew out of the need to correct the obstetrical injuries that resulted from the trial and error efforts of men-midwives



History of Gynecology

- Gynecology eventually broke away from more general pelvic surgery to focus upon the female reproductive tract
- Early gynecology developed following the Victorian era standards and beliefs about the role of women in society

Gynecology and Mental Health

- The connection between female sexual organs and mental health has a tradition that dates back to Hippocrates
- Hysteria originally used to describe a psychiatric illness caused by the wandering of the uterus away from its proper position in the pelvis

Gynecology and Mental Health

- Early surgical interventions reflected the proposed connection between female sexual organs and mental health
- Oopherctomy: thought to be a cure for epilepsy, nymphomania and anxiety and continued to be performed for the treatment of psychological disorders as late as 1946
- Clitorectomy: thought to cure masturbation (a cause of insanity)

Chronic Pelvic Pain in Women

- Non-cyclic pain of at least six months duration, severe enough to cause disability and possibly warrant medical intervention
- Can occur in various locations such as the pelvis, anterior abdominal wall, at or below the umbilicus, lower back or buttocks

Chronic Pelvic Pain in Women

- Prevalence ranges from 15% to 25% depending upon definition and measurements
- In the US, accounts for 10% of gynecologic consultations, 40% of diagnostic laparoscopies and is the indication for 12% of hysterectomies
- In the US, has been estimated to cost women 2.8 trillion dollars in out-of-pocket expenses and 822 million dollars in time lost from work

Chronic Pelvic Pain in Women

- This group of patients is often recognized as being difficult to assess and manage
- Women are often treated by physicians from multiple specialties and undergo imaging studies, surgical interventions, physical therapy and trials of medications
- Appropriate treatment of CPP is challenging and uses numerous healthcare resources with estimates that the disorder costs the US healthcare system 1.3 trillion dollars a year

Chronic Pelvic Pain in Women

- Is associated with a variety of other pain disorders
- In approximately 40% of laparoscopic surgeries, no obvious cause is found and when pathology is identified, there is a weak association between the site of the insult and the pain complaint
- Medical and surgical interventions have proven to have varying levels of success
- There is increasing recognition that variables such as trauma history, psychological co-morbidities and coping strategies are central to progression and treatment

Chronic Pelvic Pain and Mental Health

- Early literature implied that women reporting chronic pelvic pain had a high degree of feminine identity problems arising from conflicts about sexuality

Chronic Pelvic Pain and Mental Health

- Psychiatric co morbidity is often seen in women with CPP
- In other pain conditions, it is generally accepted that the experience of chronic pain can lead to severe stress and may contribute to the development of psychopathology

Chronic Pelvic Pain in Women

- Commonly observed co-morbidities include:
  - Depression
  - Psychosexual dysfunction
  - Physical and sexual abuse
  - Somatization
  - Personality disorders
- Given the cross-sectional data often used in chronic pelvic pain research, it is challenging to determine if psychopathology is a predisposing factor or a reaction

Chronic Pelvic Pain and Mental Health

- The connection between psychiatric co morbidity and CPP differs across types of CPP disorders and parallels abuse history
- Women with vulvar pain are less likely to have psychological disturbance, a sexual and/or physical abuse history or other somatic complaints
- Women with diffuse and continuous pelvic pain report more depression and anxiety than women with more focused and cyclic pain

Chronic Pelvic Pain and Mental Health

- It has been demonstrated that the alterations of serotonin and norepinephrine observed in mood disorders may impact the modulating effects of the periaqueductal gray system
- Resulting increased facilitation or decreased inhibition causes minor input from the peripheral nervous system to be amplified and receive more attention
- While accepted in other pain conditions, the same connection has not yet been clearly made in CPP

Research

- The last decade has seen a paradigm shift in medicine from biomedical reductionism to more heuristic biopsychosocial model
- This approach is reflected in research in numerous areas of pain
- Still in the very early stages in gynecology

Research

- Will discuss the findings of research conducted by pelvic pain group at UNC Chapel Hill
  1. Quality of Life and Sexual Function After Hysterectomy in Women With Preoperative Pain and Depression (2004)
  2. Identification of Diagnostic Subtypes of Chronic Pelvic Pain (2006)
  3. Psychosexual Correlates of Postsurgical Pain in Women with Vulvodynia (2011)
  4. Catastrophizing and Persistent Pain in Women with Endometriosis (2011)

Quality of Life and Sexual Function After Hysterectomy in Women With Preoperative Pain and Depression

- 2004 secondary data analysis from the Maryland Hysterectomy Study
- 1,249 women who had hysterectomies for benign conditions
- Participants interviewed, before surgery and at 5 intervals after, regarding pelvic pain, depression, quality of life, and sexual function
- Compared quality of life and sexual function at 6 and 24 months among women with preoperative pelvic pain alone, depression alone, both pelvic pain and depression, or neither

Results: Study 1

- Women with depression and pain
  - Were very likely to report pelvic pain as a problem at 24 months (OR 4.91, 95% CI 2.63-9.16)
  - Were more likely to report pain during sex (OR 2.22; 95% CI 1.09-4.51), results worse than expected (OR 2.41; 95% CI 1.26-4.62), and recovery slower than expected (OR 2.35; 95% CI 1.46-3.76) at 24 months

Results: Study 1

- Women with depression only
  - At baseline had greater odds than women without pain or depression (1.59-2.12) for continued postoperative pelvic pain as a problem, not being sexually active, and pain during sex
  - By 24 months none of their outcomes were significantly different

Results: Study 1

- Women with pain only
  - Had an elevated risk for having pelvic pain and pain with intercourse as a problem
  - Only those with severe or moderate pelvic pain had an OR that remained important 24 months after hysterectomy (OR 2.2, 95% CI 1.17-4.23)

Conclusions: Study 1

- Interaction analysis confirmed that the combined predictive strength (on both the additive and multiplicative scale) of depression and pelvic pain on each outcome was larger than that predicted by depression or pain alone
- Women with pelvic pain and depression fare less well 24 months after hysterectomy than women who have either disorder alone or neither

Identification of Diagnostic Subtypes of Chronic Pelvic Pain

- 289 women presenting for care in Pelvic Pain Clinic
- Collected questionnaire data including history of trauma and abuse, physical and mental health functioning, previous pelvic surgeries and non-pelvic pain symptoms
- A single gynecologist identified chronic pelvic pan subtypes on the basis of reported symptoms and localization of pain during exam

Results: Study 2

- 7 diagnostic categories were identified
  1. Diffuse abdominal/pelvic pain
  2. Vulvovaginal pain
  3. Cyclic pain
  4. Neuropathic pain
  5. Nonlocal pain
  6. Trigger points
  7. Fibroid tumor pain

Conclusions: Study 2

- Of the 7 categories 2 main subtypes identified: diffuse abdominal/pelvic pain and vulvovaginal pain
- Women with diffuse abdominal/pelvic pain had significantly worse mental and physical health status and more trauma compared to women with vulvovaginal and cyclic pain ($p < 0.001$)
- Endometriosis was more prevalent among the group with diffuse pain but was not as a significant factor as the subcategories themselves

Psychosexual Correlates of Postsurgical Pain in Women with Vulvodynia

- Retrospective cross-sectional exploratory study of 37 women who had undergone vestibulectomy
- Participants completed questionnaires assessing demographic information, self-reported levels of pain, anxiety, somatization, psychological distress, and sexual function
- 8 women (22%) reported being pain free after surgery
- 29 women (78%) reported various levels of pain during intercourse and decreased sexual function

Results Study 3

Variable	Pain (N = 29)	No Pain (N = 8)	P
Age (years)	35.86 ± 1.47	39.25 = 3.05	0.340
Parity	1.00 ± 0.29	1.75 ± 0.45	0.186
Brief Symptom Inventory	0.847 ± 0.141	0.219 ± 0.077	< .001
Perceived Stress Scale	17.55 ± 1.59	11.38 ± 2.13	0.034
Spielberger Anxiety Inventory (state)	39.32 ± 2.86	30.38 ± 3.64	0.070
Spielberger Anxiety Inventory (trait)	43.48 ± 2.92	31.38 ± 3.53	0.017
Pennebaker Inventory of Limbic Languidness	121.73 ± 5.92	94.63 ± 7.31	0.010

Results Study 3

Pain Rating	BSI	PILL	STAIY (state)	STAIY (trait)	PSS
Unprovoked vaginal pain					
Average	0.638 ***	0.444	0.511 ***	0.519***	0.513***
High	0.695 ***	0.605 ***	0.505***	0.530***	0.465
Low	0.556 ***	0.265	0.451	0.443	0.478
Intercourse-related pain					
Average	0.506	0.509	0.379	0.416	0.358
High	0.455	0.437	0.339	0.418	0.341
Low	0.571 ***	0.540 ***	0.446	0.411	0.388

$p < 0.05$ *** $p < 0.001$

Conclusions: Study 3

- Significant association between psychological distress and persistent pain state
- Pathophysiology of localized vulvodynia may be more complex in some women leading to suboptimal surgical treatment response
- Psychological distress may predict poor surgical outcomes
- Psychological traits may be independent risk factors for developing chronic pain

Catastrophizing and Persistent Pain in Women with Endometriosis

- Prospective observational study of clinical practice
- 115 women presenting for treatment of endometriosis-associated pain
- Participants completed questionnaires addressing pain, mental health and catastrophizing at entry and one-year follow up
- Main outcome measure assessed was change in pain reports using the McGill Pain Questionnaire

Results: Study 4

Predictor Variable	LS Mean	SE	B	P
Number of Prior Pelvic Surgeries			0.16	0.05
None (N= 23; 20%)	19.36	1.77		
1-2 (N= 59; 52%)	17.73	1.12		
≥3 (N= 32; 28%)	22.66	1.53		
Past Physical Therapy			0.17	0.03
Yes (N= 9; 8%)	25.17	2.78		
No (N = 105; 92%)	18.95	0.81		
Catastrophizing			0.35	<0.001
Mild (N = 64; 56%	16.78	1.08		
Moderate (N = 37; 33%)	21.80	1.42		
Severe (N= 13; 11%)	25.81	2.41		
				R^2= 0.35

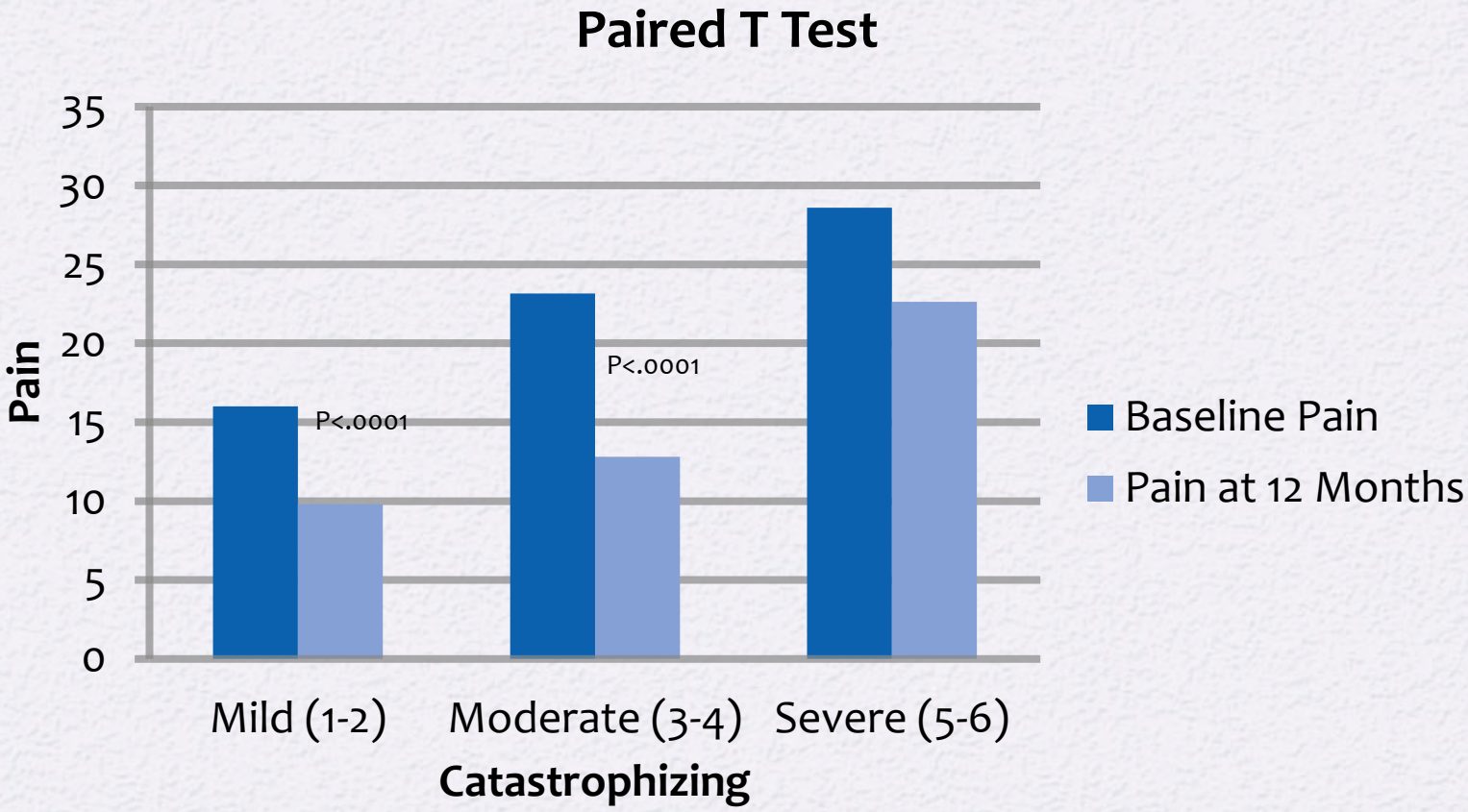
Linear Regression Outcome: Baseline McGill Total Pelvic Pain

Results: Study 4

Predictor Variable	LS Mean	SE	B	P
Hysterectomy			- 0.29	0.008
Yes (N = 13; 12%)	5.41	2.75		
No (N=57; 54%)	12.94	1.04		
Other Pelvic Surgery			- 0.02	0.85
Yes (N= 22; 21%)	8.97	2.27		
No (N= 84; 79%)	9.38	1.35		
Physical Therapy Treatment			0.17	0.04
Yes (N=49; 46%)	10.99	1.87		
No (N= 57; 54%)	7.35	1.69		
Catastrophizing			0.18	0.04
Mild (N= 61; 58%)	11.36	1.12		
Moderate (N= 33; 32%)	11.56	1.50		
Severe (N = 12; 11%)	17.93	2.56		
				$R^2 = 0.44$

Linear Regression Outcome: 12 Month McGill Total Pelvic Pain

Results: Study 4



Conclusions: Study 4

- On average participants experienced 37.4% reduction in pain
- Adjusted for baseline pain, nulliparity and catastrophizing were associated with decreased probability of interval pain improvement

Conclusions: Study 4

- Only those with mild and moderate levels of catastrophizing showed significant pain improvement at one year
- Chronic pain related to endometriosis may be more like other idiopathic pain disorders than previously believed
- Biopsychosocial variables play an important role in severity of reported pain

Conclusions: Summary

- Study 1: The combined predictive strength of depression and pelvic pain on outcomes was larger than that predicted by either alone
- Study 2: Mental and physical health status differed across pelvic pain diagnostic categories

Conclusions: Summary

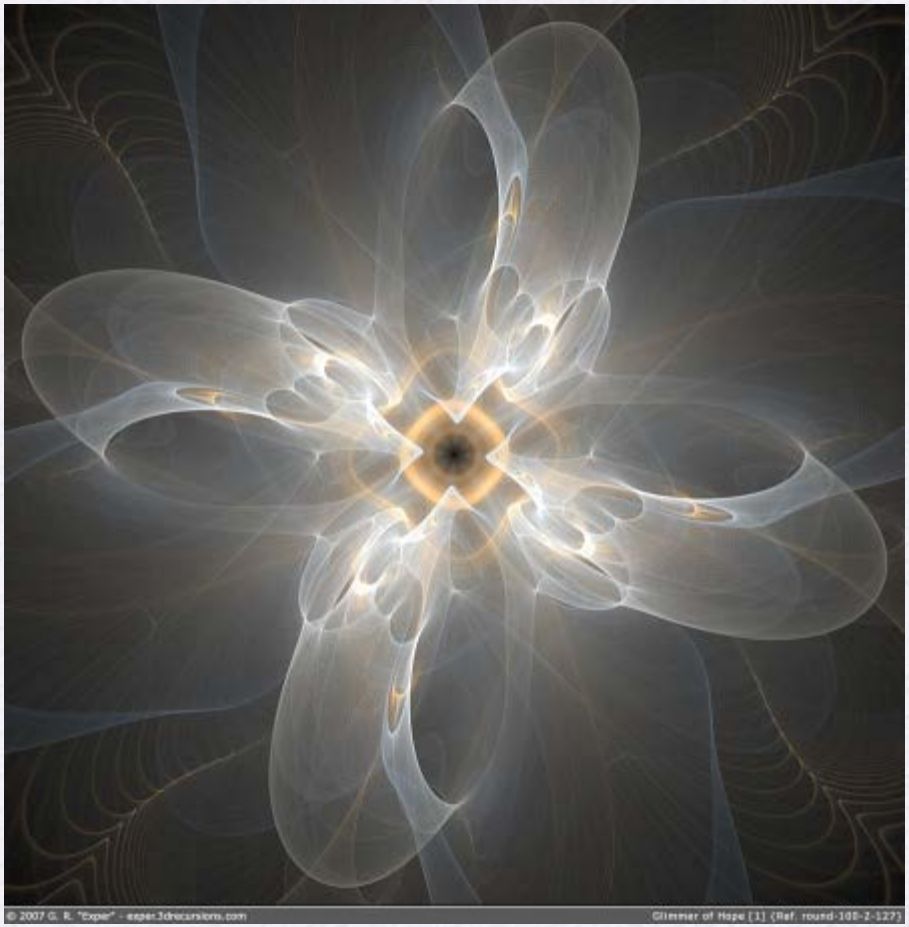
- Study 3: Pathophysiology of localized vulvodynia is complex and leads to suboptimal surgical treatment response
- Study 4: Biopsychosocial variables play an important role in severity of reported pain

Recommendations

- The complex relationship between gynecology and mental health created the separation of the two, but, this approach is no longer serving clinical research and practice well
- Findings from our group support an approach to gynecologic pain that considers trauma/abuse history, coping strategies and psychiatric co-morbidities

Recommendations

- Chronic pelvic pain would benefit from the model that is used in other pain conditions that focuses upon predisposing, precipitating and perpetuating/maintaining factors
- There is a need for increased knowledge about the neurobiological changes leading to chronic pelvic pain so that more effective medical and behavioral interventions can be created



- Thank you
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