Fibromyalgia: An Overview

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Immature Defense Mechanism

**Fantasy:** Tendency to retreat into fantasy in order to resolve inner and outer conflicts.

Fibromyalgia

Why does a psychiatrist care about fibromyalgia?
Isn't it a rheumatological disease?
Functional Somatic Syndromes

THE ONLY SLIDE I WILL READ... I PROMISE.

“Functional somatic syndromes are “characterized by patterns of persistent bodily complaints for which adequate examination does not reveal sufficiently explanatory structural or other specified pathology,” but they are common worldwide and are seen by practically all subspecialties of medicine.” (2)

“The various functional syndromes are similar in that they are diffuse, nonspecific, ambiguous and prevalent in healthy, nonpatient populations. Symptoms include common complaints such as fatigue, headache, joint pains, weakness, memory problems, anxiety and palpitations. These patients have a higher incidence of psychiatric disorders, particularly anxiety, depressive and somatoform disorders. Psychosocial factors that amplify symptoms include: (1) the belief that one is sick, (2) the strong role of suggestion, (3) the secondary gain of the sick role and (4) stress”.

“Functional somatic syndromes account for 25% to 50% of outpatient visits, estimated at 400 million clinic visits per year in the United States. They also are among the most common illnesses encountered in subspecialty care.” (3)

These syndromes have:
- Similar phenomenologies.
- High rates of co-occurrence.
- Similar epidemiologic characteristics.
- Higher-than-expected prevalences of psychiatric co-morbidity.

“Suffering is exacerbated by a self-perpetuating, self-validating cycle in which common, endemic, somatic symptoms are incorrectly attributed to serious abnormality.” (5)

The climate surrounding functional somatic syndromes includes:
- sensationalized media coverage.
- profound suspicion of medical professionals.
- the mobilization of parties with a vested self-interest in the status of functional somatic syndromes. (Pharmaceuticals, Pseudoscience, “Patent Medicine”)
- litigation, and a clinical approach that overemphasizes the biomedical and ignores psychosocial factors.

“These factors influence exacerbate and perpetuate the somatic distress of patients, heighten their fears and pessimistic expectations, prolong their disability, and reinforce their sick role.” (5)

Functional Somatic Syndromes

- Fibromyalgia
- Irritable Bowel Syndrome
- Chronic Pelvic Pain
- Chronic Fatigue
- Tension Headaches
- Vulvodynia
- TMJ Disorder
- Restless Leg Syndrome
- Interstitial Cystitis
- PMS
- Repetitive Strain Injury
- Hypoglycemia
- Gulf War Syndrome
- Chronic Lyme Disease
- “My Disability”, in this region.
What is Fibromyalgia?

- Fibromyalgia is a commonly recognized syndrome characterized by pain, sleep disturbance, and fatigue combined with a general increase in medical symptoms, including problems of memory or thinking, and often psychological distress.

HISTORY

- Fibrositis – Sir William Gowers in 1904
  - Pain that resisted conventional treatments.
  - Did not respond to narcotic painkillers.
  - Disagreement between clinicians over whether it was psychogenic or not.
- The term Fibromyalgia was coined by researcher Mohammed Yunus as a synonym for fibrositis and was first used in a scientific publication in 1981.
- American College of Rheumatology defined diagnostic criteria in 1990. Does not include many of the commonly associated symptoms seen in clinical settings.
- Heavy controversy amongst the medical community over whether it is a real disease or not.

ACR 1990

1990 AMERICAN COLLEGE OF RHEUMATOLOGY CRITERIA FOR THE CLASSIFICATION OF FIBROMYALGIA

1. History of widespread pain:
   - Definition: Pain is considered widespread when all of the following are present: pain in the left side of the body, pain in the right side of the body, pain above the waist, and pain below the waist. In addition, axial skeletal pain (cervical spine or anterior chest or thoracic spine or low back) must be present. In this definition, shoulder and buttock pain is considered as pain in each involved area. Low back pain is considered lower segment pain.
   - For classification purposes, patients are said to have fibromyalgia if criteria 1 and 2 are satisfied. Widespread pain must have been present for at least 3 months. The presence of a second clinical disorder does not exclude the diagnosis of fibromyalgia.

2. Pain in 11 of 18 tender point sites on digital palpation:
   - Digital palpation should be performed with an approximate force of 4 kg.
   - For a tender point to be considered "positive" the subject must state that the palpation was painful; "tender" is not to be considered painful.
   - For classification purposes, patients are said to have fibromyalgia if criteria 1 and 2 are satisfied. Widespread pain must have been present for at least 3 months. The presence of a second clinical disorder does not exclude the diagnosis of fibromyalgia.

Tender Points

- Occiput: bilateral, at suboccipital muscle insertions
- Low cervical: bilateral, at external aspects of interspinous spaces at C5-C7
- Trapezius: bilateral, at midpoint of upper border
- Supraspinatus: bilateral, at origins, above the scapula spine near the medial border
- Second rib: bilateral, at second costochondral junctions, just lateral to junctions on upper surfaces
- Lateral epicondyle: bilateral, 2 cm distal to epicondyles
- Gluteal: bilateral, in upper outer quadrants of buttocks in anterior fold of muscle
- Greater trochanter: bilateral, posterior to trochanteric prominence
- Knees: bilateral, at medial fat pads proximal to joint line

Common Associated Symptoms

- Sleep Difficulties
- Fatigue
- Muscle Pain
- Weakness
- Cognitive Difficulties ("Fibro Fog")
- Parasthesias
- Headache
- Depression
- GI Symptoms: IBS
- Nausea
- Diarrhea
- Abdominal Pain
- Constipation
- Heartburn
- Dizziness
- Nervousness/Anxiety
- Blurred Vision
Epidemiology

- Fibromyalgia is seen in about 2-4% of the general population.
- It is most commonly diagnosed in individuals between the ages of 20 and 50, though onset can occur in childhood.
- Fibromyalgia is diagnosed more frequently in women (9:1 ratio).
- Using ACR criteria, the prevalence of fibromyalgia in the adult general population is generally similar across the world.
- The prevalence of fibromyalgia in children in three different studies was 1.2%-6.2%.
- The prevalence of fibromyalgia is generally greater in clinical settings than in epidemiologic studies.
- Commonly co-occurs with other rheumatologic disorders: RA, OA, SLE.

Etiology and Pathophysiology

Many theories have been proposed for fibromyalgia, but neither etiology nor the pathophysiologic mechanisms are known, and no model explains more than a little of the available data. Some of the proposed explanations are:

- Genetic Factors:
  - Nonspecific polymorphisms in serotoninergic, dopaminergic, & catecholaminergic systems.
  - Also found in IBS, CFS, and MDD.
  - Low gene expression for the proinflammatory cytokines interleukin-4 and interleukin-10
- CNS Abnormalities:
  - Metabolic dysfunction in the hippocampus - Cognitive function, Sleep Regulation, Pain Perception.
  - Altered regional blood flow within pain-modulating regions, such as the dorsal cingulate, amygdala, and nucleus accumbens.
  - Reduced mu opioid receptor binding in the nucleus accumbens, amygdala, and dorsal cingulate, correlated with the relative amount of affective pain.
- Psychosocial Factors:
  - Reduced education, nonmarital status, lower household income, smoking, and obesity. Higher frequency of sexual abuse in childhood.
  - Work-related psychological factors such as work demands and factors such as job control, social support, and psychological distress.
- Sleep Disturbance: Come to Dr. Vashist’s talk this spring, when he will enlighten you on this topic.
- Trauma: Neck Trauma increases risk.
- Immune Mechanisms
  - Environmental Exposure: Viruses
  - Neuroendocrine Dysfunction: Serum growth hormone levels and levels of somatomedin C (insulin-like growth factor-I) have often been reported to be low.
- Abnormal Pain Processing: Decreased inhibition and increased facilitation.
Proposed Pathophysiology

Diagram showing proposed pathophysiology with arrows indicating factors and outcomes related to chronic stress, fibromyalgia, and pain/depression.

Diagnosis

- No labs or tests are helpful, or at least widely accepted.
- Self Report
  - Fibromyalgia Impact Questionnaire (FIQ)
  - Health Assessment Questionnaire (HAQ)
  - Regional Pain Scale
  - Symptom Intensity Scale
- Tender Point Examination
  - Dolorimetry or Digital Palpation can be used.
  - Digital Palpation is inconsistent – (4kg of pressure, easily biased)
- Primary and Secondary Fibromyalgia
  - Primary – No comorbid condition that would explain symptoms.
  - Secondary – Comorbid condition

Treatment

- Education
  - Limited Benefits
- Exercise
  - Improves fitness and reduces pain.
  - Difficult to get patients to engage.
- Cognitive Behavior Therapy (CBT)
  - Mixed Results.
- Other Non-drug Treatment: Hypnosis, Strength Training, Chiropractic, Acupuncture, Biofeedback.
  - Limited or Contradictory Results.
  - May be worth trying though.
- Pharmacotherapy:

Medications

FDA Approved:
- Duloxetine (Cymbalta)
- Milnacipran (Sevella)
- Pregabalin (Lyrica)

(Alphabetical Order Only)
Duloxetine
- SNRI: inhibits reuptake of Serotonin (5HT) and Norepinephrine (NE) in synaptic cleft.
- Ratio of 5HT:NE around 5:1.
- Increased neurotransmitter thought to mediate endogenous pain inhibitory mechanisms.
- FDA approved for the treatment of Major Depression, GAD, Diabetic Neuropathy, Chronic musculoskeletal pain and Fibromyalgia.
- Dose range for FMS is 60mg QDay.
- May have benefit in patients with co-morbid depression and anxiety.
- Side effects similar to most other AD medications.
- Concerns: Increased SI, Expensive.

Milnacipran
- SNRI so similar pharmacology to others in class.
- 5HT:NE Ratio around 3:1.
- Newest kid on the block.
- FDA Approved for Fibromyalgia only at this time.
- Dose for FMS 50mg BID after 7 day titration.
- No evidence to support use in co-morbid anxiety or depression at this time.
- Side effect profile similar to other AD.
- Concerns: Increased SI, Expensive.

Pregabalin
- Structural analog of GABA.
- Binds alpha2-delta subunit of voltage-gated Ca channels.
- Decreases release of NE, Substance P and Glu.
- Result is anticonvulsant, analgesia and anxiolytic action.
- FDA Approved for Tx of diabetic neuropathy, post-herpetic neuralgia, adju for partial complex seizures, and fibromyalgia.
- Dose range for FMS is 150-225mg BID.
- Concerns: Neurocognitive deficits, weight gain, peripheral edema. Scheduled drug. Expensive.

Other Medications
Some Evidence
- Tramadol – weak SNRI
- Amitriptyline - TCA
- Dopamine Agonists
  - Pramipexole, Ropinirole
- Gabapentin
- Muscle Relaxants
  - Cyclobenzaprine, Tizanidine
- Investigational
  - Cannabinoids, Tropisetron

Little/No Evidence
- NSAIDS
- Opioids
- Corticosteroids
- Benzodiazepines
Strong Evidence

- In honor of my good friend Dr. Barney Miller who taught me the importance of the placebo effect.
- Countless studies have supported the effect of placebo.
- Lipman, et al. Found that a significant number patients reported 50-100% pain relief when a saline solution administered and were told pain would be relieved.
- Remember, placebo is a treatment.

The Future

Trend towards models like, Central Sensitivity Syndromes, Functional Somatic Syndromes etc. ?

Collaboration between sub-specialties to treat common illness ?

Special Thanks

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Questions ?

Sublimation: Transformation of negative emotions or instincts into positive actions, behavior, or emotion. A "mature" defense mechanism. Does it apply here?
References


5. Firestein: Kelley's Textbook of Rheumatology, 8th ed.
