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Evaluating diffuse aches and pains: 
It’s not all fibromyalgia (but often it is)

Seetha Monrad MD
Case presentation

- A patient presents with diffuse myalgias, fatigue, and weakness
Approach to evaluation

• Does this represent rheumatic symptoms of an endocrinopathy?
  – Hypo- or hyper-thyroidism
  – Hypogonadism, diabetes, acromegaly, adrenal disease, parathyroid disease
• Could this be a toxic/drug effect?
  – Hydroxymethylglutaryl coenzyme A (HMG-CoA) reductase inhibitors (statins)
  – Ethanol
  – Zidovudine, clofibrate, cyclosporine
• Is this a paraneoplastic process?
• Is this a systemic inflammatory rheumatic disease?
• Is this a chronic pain syndrome?
Case 1: HPI

• A 70 year old man presents to your clinic complaining of “aches and pains”. On closer questioning, he notes
  – Gradual onset over the past 6 months
  – Morning stiffness lasting 2-3 hours
  – Symmetric pain predominantly localized in his shoulders and hips, making it difficult to get out of a chair or comb his hair
  – No other systemic symptoms
Case 1: Objective

- Elderly man in mild discomfort
- Decreased active ROM in neck, shoulders, and hip flexors; a little tenderness to palpation in those areas
- Normal strength

- Hgb 11.2 g/dL (nl 12-36)
- CK 40 IU/L (WNL)
- TSH, T4 WNL
- ESR 96 mm/hr (nl 0-20)
Polymyalgia rheumatica

- Never occurs before age 50
- Common: in older persons prevalence approaches that of rheumatoid arthritis (approximately 1 percent)
- F:M 2:1, northern latitudes, Caucasians
- HLA-DR4 association
Polymyalgia rheumatica

• **Diagnosis:**
  – Clinical presentation
  – Elevated inflammatory parameters (ESR) – sometimes > 100

• **Differential:** Some overlap with RA

• **Treatment:**
  – Exquisitely sensitive to “low” dose steroids (<20 mg/day)
  – Duration of treatment prolonged – 1-2 years
Relationship to giant cell arteritis

- PMR is present in about 50 percent of patients with GCA
- GCA occurs in approximately 15 percent of patients with PMR
- Significant overlap in age of presentation, ethnicity/geography, HLA associations
- Need to screen all PMR patients for GCA signs:
  - headache, scalp tenderness, visual changes, jaw claudication, prominent temporal arteries
Case 2: HPI

- A 55 year old woman presents with “aches and pains”. On closer questioning, she notes
  - Gradual onset over the past 6 months
  - Morning stiffness lasting 2-3 hours
  - Difficulty getting out of a chair, climbing stairs, combing her hair, and reaching for jars in high cupboards; not actual pain with attempting these activities
  - No difficulty holding the comb or standing on toes to get to cupboards
Case 2: Exam & labs

- Minimal muscle tenderness; no joint swelling or tenderness
- Significant proximal muscle weakness in both upper and lower extremities
- No other neurologic abnormalities

CK elevated
Important

• This could easily be a presentation of statin myopathy or hypothyroidism (and statistically these are the most likely)

• Also a presentation of an inflammatory myopathy, especially if CK highly elevated
Inflammatory myopathy

- Polymyositis, dermatomyositis (inclusion body myositis)
- Bimodal age distribution
- Female predominance; African American
- Proximal muscle weakness

**Diagnosis**
- Elevated muscle enzymes
- EMG abnormalities
- Muscle biopsy: inflammation
Dermatomyositis: Gottron’s sign
Dermatomyositis: Heliotrope rash
Shawl sign

Mechanic’s hands

Periungual erythema
Inflammatory myositis

• Treatment
  – Prednisone (1 mg/kg)
  – Methotrexate and/or azathioprine as steroid sparing agents
  – For rapidly progressive or refractory cases, IVIG or rituximab

• Association with malignancy (especially if older onset)
Case: History

• A 48 year old woman presents with diffuse muscle pain, weakness and significant fatigue. She reports
  – Symptoms for over 3 years that have become slightly worse in the past 6 months
  – Generalized pain and fatigue that limit her ability to work
  – Sleep disturbance
Case: Objective findings

• General physical exam:
  – Normal vital signs
  – Diffuse tenderness to palpation
  – Some tenderness around joints, but no obvious synovitis
  – Normal neurologic exam; no objective muscle weakness

• Labs: CBC, ESR, CRP, chemistry profile, TSH normal
History

• 1900s: “fibrositis”: inflammation of fibrous tissue overlying muscles

• 1970s: “fibromyalgia”

• 1990: American College of Rheumatology criteria
  – Chronic widespread pain in all four quadrants of the body and axial skeleton
  – 11/18 tender points (pain with 4 kg pressure)
Fibromyalgia

- Central pain syndrome with widespread pain and fatigue
  - Central pain: differs from
    - Nociceptive pain
    - Neuropathic pain
- Part of a larger spectrum of central sensitivity disorders
Fibromyalgia
- 2%-4% of population
- Defined by widespread pain and tenderness

Chronic Fatigue Syndrome (CFS)
- 1% of population
- Fatigue and 4 of 8 “minor criteria”

Psychiatric Disorders
- Major depression
- OCD
- Bipolar
- PTSD
- Generalized anxiety disorder
- Panic attack

Somatoform Disorders
- 4% of population
- multiple unexplained symptoms without “organic” findings

Regional Pain Syndromes

Pain and/or sensory amplification
Overlapping regional syndromes

- Tension/migraine headache
- Temporomandibular joint syndrome
- Irritable bowel syndrome
- Interstitial cystitis/ painful bladder syndrome
- Chronic pelvic pain/ vulvodynia/primary dysmenorrhea
- Idiopathic low back pain
- Cognitive difficulties
- ENT complaints (sicca, vasomotor rhinitis)
- Vestibular complaints
- Esophageal dysmotility
- Multiple chemical sensitivity, “allergic” symptoms
- Non-cardiac chest pain
The neurologist sees chronic headache, the gastroenterologist sees IBS, the otolaryngologist sees TMJ syndrome, the cardiologist sees costochondritis, the rheumatologist sees fibromyalgia, and the gynecologist sees PMS.
Epidemiology

- 2-3% general population, 4% of women (using ACR criteria)
- Chronic widespread pain ~10%
- Women more likely to seek treatment ~8:1
Pathophysiology

• Genetics
  – First degree relatives have an eight-fold greater risk of developing FM
  – Family members more likely to have other regional pain syndromes
  – Several potentially related polymorphisms affecting metabolism/transport of monoamines
Pathophysiology

- Environmental factors: associated with FM in 5-10% of those exposed
  - Early life trauma
  - Physical trauma
  - Peripheral pain syndromes/autoimmune disorders
  - Psychological stress/distress
  - Certain infections (hepatitis C, EBV, parvovirus, Lyme disease)
  - Certain catastrophic events
Aberrant sensory and pain processing

- “Volume control” problem
- Lowered pain threshold throughout entire body
- Global problem with sensory processing: e.g. loudness sensitivity
Gracely, Arthritis Rheum 2002
Other biomarkers

- Increased CSF levels of glutamate
- Normal/high levels of CSF enkephalins
- Decreased CSF levels of biogenic monoamines (products of serotonin, norepinephrine)
Diagnosis: History

- **Pain**
  - Current and lifetime history of widespread pain
  - Involving musculoskeletal and non-musculoskeletal areas
  - Unpredictable, worsened by stress
  - Can also have stiffness, paresthesias

- **Fatigue**

- **Insomnia, sleep disturbance**

- **Memory difficulties**
Diagnosis

- PMH: Comorbid syndromes
- FHX: other family members with pain syndromes
- PE: Diffuse tenderness
Evaluation

- If acute/subacute, may warrant further investigation, including
  - Inflammatory markers
  - CBC, chemistry profile
  - TSH, Vitamin D
  - NOT autoantibodies unless clinically indicated

- If chronic, less need for extensive work-up
Treatment: Principles

Initial symptoms of pain, fatigue, etc.:
- Disordered sensory processing
- Neuroendocrine disturbances

Dually focused treatment

Pharmacologic therapies to improve symptoms

Functional consequences of symptoms:
- Distress
- Decreased activity
- Isolation
- Poor sleep
- Increased distress
- Maladaptive illness behaviors

Nonpharmacologic therapies to address dysfunction

Dadabhoy/Clauw, 2008
Treatment: Principles

1. Education
2. Aerobic Exercise
3. Cognitive behavioral therapy
4. Pharmacologic therapy
Treatment: Education

Chronic Pain & Fatigue Research Center

For Patients

Numerous studies have supported the importance of educating patients with fibromyalgia and related conditions about the illness(es) they possess. When patients better understand why they have these symptoms and why different types of treatment work, they become more effective partners in managing their illness(es). In parallel, we educate doctors and health care providers about these illnesses and the most appropriate treatments. In the end, we strive for a partnership between health care providers and patients that makes use of drug and non-drug treatments. It is critically important for patients with this illness to understand that with the currently available drug and non-drug treatments, the overwhelming majority of patients with these illnesses can lead a normal and fulfilling life.

Get informed

Education can give patients the power to play a significant role in their own health care and well-being. Understanding what is happening inside the brain and body is crucial to understanding how to manage symptoms. Further, knowing what is happening physically will go a long way toward improving how a patient feels emotionally. To that end, this Web site can be a great resource for patients and their families.

Learn about fibromyalgia, including risk factors and who is affected by it.

Learn about Chronic Multisymptom Illnesses, including regional and organ-specific symptoms and syndromes that often accompany fibromyalgia.

Take control of your well-being

Once you have a better idea what these illnesses are and what is going on inside your body, there are several things you can do to improve your quality of your life. Below are a few tips to get you started:

1. Learn more about the illness(es).
2. Take an active role in managing your health.
3. Set realistic goals for yourself.
4. Stay positive and focused.
5. Seek support from friends, family, and professionals.
6. Maintain a healthy lifestyle.
Treatment: Exercise

- Aerobic
- Highly effective
- Key barriers: tolerance, compliance, adherence
- Recommendations:
  - At least twice a week (more if possible)
  - Start low, go slow
  - Treat exercise as a medication
Treatment: Cognitive Behavioral Therapy

• Teaches patients techniques to reduce symptoms, increase coping strategies, and identify/correct maladaptive behavior strategies

• Especially beneficial for improving functioning
Treatment: Pharmacologic

• Dual norepinephrine-serotonin reuptake inhibitors
  – Tricyclic antidepressants: amitryptiline, nortriptyline
  – Cyclobenzaprine
  – Venlafaxine, duloxetine, milnacipran

• Anticonvulsants
  – Pregabalin
  – Gabapentin

• Other: tramadol, selective serotonin reuptake inhibitors, sedatives
Treatment: Pharmacologic

- Not indicated in fibromyalgia
  - NSAIDs
  - Corticosteroids
  - Opioids
Summary

• Generate a broad differential for the patient presenting with diffuse aches and pains, and eliminate appropriately

• For the diagnosis of FM:
  – Education is KEY
  – Manage symptoms of pain, insomnia, comorbid depression, etc. with appropriate therapeutics
  – Emphasize the essential role of low grade exercise
  – If possible, utilize cognitive behavioral therapy to assist with improved functioning
Slide 14: Source Undetermined
Slide 15: Source Undetermined; Source Undetermined
Slide 16: Source Undetermined; Source Undetermined
Slide 21: Source Undetermined
Slide 35: Dadabhoy/Clauw, 2008
Slide 37: Screenshot by S. Monrad, UMHS