Rheumatoid Arthritis

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Case Study

• 28 Year Old Female Non-Smoker Nurse
• Exam – Diagnosed with RA 2004; Two deliveries 10/06 and 8/10
• 5.7.133; 100/62, 96/62, 92/62
• 2004 – Presented to Rheumatology c/o joint pain and stiffness. She has stiffness about 1 to 2 hours in the morning and on some days can last all day long. Noticed swelling across her hands, pain in her knees and loss of grip strength. Symptoms began about 1 year ago. Has a strong family history of RA and fibromyalgia. Takes Ibuprofen and Aleve prn.

  Examination - Noted synovitis involving MCP joints both hands. Pain at the extremes of flexion and extension and her elbows. Range of motion in both shoulders significantly limited.

  Impression - Likely inflammatory arthritis., most likely RA.

  Plan – X-rays of hands and feet; given prescription for Methotrexate, given a shot of IM Medrol to give symptomatic relief while waiting for MTX to kick in. Next year plan to start her on Plaquinil and Sulfasalazine. Was advised to follow up for monitoring to include lab work and eye exam.

  Throughout 2004 reported variable symptoms and medication adjustments including Prednisone for exacerbations. Noted to be Seropositive for RA including ^CRP and other inflammatory markers.

  Became pregnant in 2006. Multiple medication adjustments to reduce risk to fetus. RA fairly active through out term. Successful delivery.

  After delivery and for the next several years, patient was closely monitored, again with multiple medication adjustments to include a TNF inhibitor such as Enbrel, Humira or Remicade. Continue Plaquinil. Throughout this period never noted to have rheumatoid nodules and medications included both DMARDS and BIO-DMARDS/TNF inhibitors.

  6/07 Hgb – 13.5; Hct 39.9 Osteopenia diagnosed on bone density scan.

  Had another successful delivery 2010.

  Last office visit post delivery bilateral wrist pain, occasionally elbows, shoulders, knees, ankles and feet will swell. Joint pain every day and symptoms are worse in the morning and improve as the day progresses. Managed on Sulfasalazine, Plaquinil, Calcium, Foic acide, Prednisone 10 mg daily and Humira 40 mg subcu every 2 weeks.
Rheumatoid Arthritis

- Inflammatory process
- Autoimmune disease
- Systemic
Terminology

Research

• **Cellular roles**
  • CD4 T cells
  • Mononuclear phagocytes
  • Fibroblasts
  • Osteoclasts
  • B Lymphocytes producing autoantibodies/rheumatoid factors

• **Inflammatory mediators**
  • Cytokines
  • Chemokines
  • Tumor Necrosis Factor alpha (TNF-alpha)
  • Interleukin (IL-1, IL-6)
  • Transforming growth factor beta
  • Fibroblast growth factor
  • Platelet
Defined

- RA is a systemic autoimmune/inflammatory disease that leads to synovitis, serositis, rheumatoid nodules and vasculitis
Joint Classifications

- Anatomical
- Biomechanical
- Structural
- Functional
Structural

- Fibrous
- Cartilaginous
- Synovial
Biomechanical

- Simple – monoarticular
- Compound – oligoarticular
- Complex – polyarticular
Typical Joint

- Synovium
- Cartilage
- Tissues
Types of Joint Involvement

- Symmetrical
- Asymmetrical
Sensitivity & Specificity

- Sensitivity: % of people *with disease* testing positive (+)
- Specificity: % of people *without disease* testing negative (-)
- 4 subgroups:
  - True Positive (TP)
  - False Positive (FP)
  - True Negative (TN)
  - False Negative (FN)
- Sensitivity – TP/TP+FN
- Specificity = TN/TN+FP
Symptoms

- Pain
- Inflammation
- Systemic involvement
Diagnosis

- Clinical symptoms
- Imaging
- Labs
- Classification criteria by medical consensus
Imaging

- X-rays
- CT’s
- MRI’s
Labs
Labs

- C-reactive Protein (CRP)
- Erythrocyte sedimentation rate
- Rheumatoid factor
- Cyclic Citrullinated Peptide (CCP)
- Antinuclear antibody
- Synovial fluid
Disease Criteria

• In 2010, American College of Rheumatology (ACR) and European League Against Rheumatism (EULAR) established classification criteria system with values between 1 and 10

• Every patient with a point total of 6 or higher is unequivocally classified as an RA patient, provided that person has synovitis in at least one joint with no other diagnostic explanation
Prevalence

- Gender
- Genetic link
- Age
Characteristics

- Involves peripheral joints
- Symmetrical in distribution
- Relapsing/remitting or rapidly progressive
- Extra-articular manifestations are common
- Skin nodules over pressure points are common
Additional Descriptive Features

- Temporal pattern
- Progressive
- Additive
- Migratory
- Axial
- Peripheral
Associative Links to RA

- Trauma
- Infection
- Chemical agents (Agent Orange)
- Abnormal metabolism
- Inheritance
- Immunological factors
Morbidity

- Obesity
- Occupational hazards
- Smoking
- 45 years of age or older
- Female
- Prior injuries
- Hereditary conditions
Treatments

- Analgesics
- Non-Steroidal Anti-Inflammatory Drugs (NSAIDS)
- Steroids
- Disease Modifying Anti-rheumatic Drugs (DMARDs)
- Biologic DMARDs
Other Treatments

• Antibiotics
• Hot/cold packs
• Rest of affected joints
• Braces or other mobility assistance devices
• Lifestyle modification
• Occupational therapy
• Surgery
• Alternative therapies
Underwriting/Prognosis/Mortality

- Degree of disability
- Effects of treatment
- Systemic involvement
- Co-morbid conditions
- Number and degree of positive serologic test
Other Forms of Arthritis

- Osteoarthritis
- Osteoporosis
- Gouty arthritis
- Ankylosing spondylitis
- Systemic Lupus Erythematosus (SLE)
- Scleroderma
- Mixed Connective Tissue Disease (CTD) and undifferentiated CTD
- Psoriatic arthritis
Underwriting Tips

- Degree of disability
- Treatment
- Systemic involvement
- Co-morbid conditions
- Number and degree of positive serologic tests
- Medical reports/musculoskeletal questionnaires
- Insurance product sought
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