JOINT PAIN

EM FLAME LECTURE: 11

COLLINS 9.19.20

LEARNING OBJECTIVES

- Understand differential diagnosis for the chief complaint of joint pain
- Recognize septic joint
- Describe the workup for joint pain in the ED

"CAN'T MISS" DIAGNOSES

- Septic Arthritis
  - A swollen hot painful joint is septic arthritis until proven otherwise
  - Pain on passive movement
  - Immediate actions: Arthrocentesis for analysis and culture, Empiric Abx
- Acute Rheumatic Fever
  - May also present with myocarditis, subcutaneous nodules, erythema marginatum, chorea

Adams Emergency Medicine
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COMMON CAUSES OF JOINT PAIN

- Osteoarthritis
  - Worse at the end of the day, older patient, X-ray shows joint space narrowing, chronic

Erosive OA with Gull Wing Appearance

OA with Bouchard's Nodes

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COMMON CAUSES OF JOINT PAIN

- Rheumatoid Arthritis
  - Worse in the morning, joint swelling, ulnar deviation of fingers, chronic

RA with Swan Neck Deformity

RA with Carpal Ankylosis

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COMMON CAUSES OF JOINT PAIN

- Gout
  - Classically swollen painful PIP of first toe, generally monoarticular, consider in patients with acute arthritis

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COMMON CAUSES OF JOINT PAIN

- Psoriatic Arthritis
  - Sausage digits with local or systemic skin changes

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DIFFERENTIAL DX OF JOINT PAIN

Trauma
Bone cancer
Tendinitis
Bursitis
Connective Tissue Disease

Cellulitis
Abscess
Osteomyelitis
Lyme Disease
Gonococcal Arthritis

Sarcoidosis
SLE
Inflammatory Myopathy
Seronegative Spondyloarthropathy

Avascular Necrosis (hip)
Vasculitides

Neuropathic pain
Temporal arteritis

Hemophilia
Sickle Cell
Serum Sickness (drug reaction)

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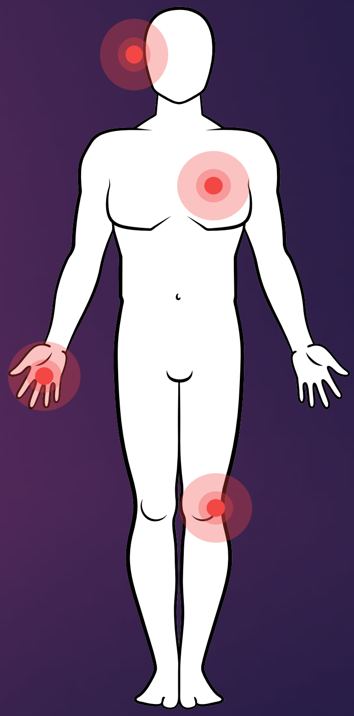
RELEVANT HISTORY

- PMH of autoimmune conditions, inflammatory conditions, or arthritis
- Acute vs. Chronic
- One vs. multiple joints
- Recent exposures (ticks, travel, sexual partners, drugs)
- Family history of autoimmune conditions or arthritis

RELEVANT PHYSICAL EXAM

- Check large and small joints in upper and lower extremities looking for extent of joint involvement and symmetry
- Check the skin for possible source of infection
- Heart sounds for friction rub
- Eyes for iritis or anterior uveitis



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INITIAL WORK UP

- ESR, CRP
- CBC
- Arthrocentesis with culture, gram stain, cell count

- X-ray of affected joints
- US for effusions

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Dx	Appearance	Cell Counts	Glucose	Crystals	Culture
Normal	Clear	<200	Nml (95-100)	None	Negative
Septic Arthritis	Purulent	5,000 to >50,000	Low (<50)	None	Positive
Rheumatoid Arthritis	Cloudy	2,000 to 50,000	Normal/Low	None	Negative
Gout	Cloudy	2,000 to 50,000	80-100	Negative birefringence needle like	Negative
Pseudogout	Cloudy	2,000 to 50,000	80-100	Positive birefringence rhomboid	Negative
Osteoarthritis	Clear	<4,000	Nml	None	Negative
Trauma	Bloody or straw colored	<4,000	Nml	None	Negative

SECONDS Pneumonic

Soft Tissue Swelling
Erosions
Calcifications
Osteoporosis
Narrowing of joint space
Deformity
Separation from fracture

Rosen's Emergency Medicine

SUMMARY

CHIEF COMPLAINT	CAN'T MISS	MOST COMMON	OTHER DX	WORK UP
Joint Pain	Septic Arthritis Acute Rheumatic Fever	Osteoarthritis Rheumatoid Arthritis Psoriatic Arthritis Gout	Trauma Bone cancer Tendinitis Bursitis Connective Tissue Disease Cellulitis Abscess Osteomyelitis Lyme Disease Gonococcal Arthritis Sarcoidosis SLE Inflammatory Myopathy Seronegative Spondyloarthropathy Avascular Necrosis (hip) Vasculitides Neuropathic pain Temporal arteritis Hemophilia Sickle Cell Serum Sickness (drug reaction)	X-ray CBC Arthrocentesis CRP/ESR

IMPORTANT LINKS / REFERENCES

1. Adams JG. Emergency Medicine: Clinical Essentials 2013
2. Welsh L. EMRA EM Fundamentals 2016
3. Marx, JA. Rosen's Emergency Medicine: Concepts and Clinical Practice 8th Edition 2014
4. Schofer JM. Emergency Medicine: A Focused Review of the Core Curriculum
5. Icons provided by SlidesCarnival.com