

Rheumatology



Joseph Z. Forstot, M.D., F.A.C.P., F.A.C.P.

Affiliate Clinical Professor, Charles E. Schmidt College of Medicine
at Florida Atlantic University

Approach to Acute Joint & Bursa Pain



Joseph Z. Forstot, M.D., F.A.C.P., F.A.C.R.

Affiliate Clinical Professor, Charles E. Schmidt College of Medicine
at Florida Atlantic University

“the swollen painful joint”



- œ Ortho Approach
- œ Past
- œ Present

**“the swollen painful
joint/bursa”**



“Get me tissue!”

Meg Wilkes



QAAA





 **Analyze**



 **Aspirate**

Aspirate



- ∞ Analysis of synovial fluid should be performed as part of the diagnostic evaluation in all patients with a new effusion.
- ∞ All joints can be aspirated.
- ∞ Bursas can also be aspirated for diagnostic purposes

Risks of Arthrocentesis



❧ Iatrogenic infection

❧ Bleeding

❧ Pain

Contraindications for Arthrocentesis

❧ Absolute: None

❧ Relative: Cellulitis, prolonged INR
or other bleeding tendencies

❧ Informed consent

Arthrocentesis Technique



- ☞ Examine the patient carefully and decide your approach
- ☞ Mark the area (if possible)
- ☞ Use sterile technique
- ☞ Always use universal precautions



 **Analyze**

Analyze



∞ **Synovial Fluid**
Analysis

Analyze



∞ Cell Count

∞ Crystal Analysis

∞ Culture/Gram Stain

∞ Chemistry

Analyze: Cell Count



- Normal <200 WBC
- >200 <2000 WBC Non-inflammatory
- >2000 $<100,000$ WBC Inflammatory
- $>100,000$ WBC Septic

Crystal Analysis



- ❧ Monosodium Urate (MSU) crystals cause gout.
- ❧ Calcium Pyrophosphate Dihydrate (CPPD) crystals cause pseudogout.

Crystal Analysis



- ❧ Calcium hydroxyapatite
- ❧ Calcium oxalate
- ❧ Cholesterol
- ❧ Glucocorticoids
- ❧ Immunoglobulins
- ❧ Talc

Chemistry Analysis



- ❧ Glucose measurement:
 - ❧ Normal is nearly equal to blood
 - ❧ If inflammatory lower than blood
 - ❧ If septic very low
 - ❧ Other measurements not necessary

Culture Fluid



∞ Bacterial

∞ Fungal

∞ AFB

AAAA



 **Appropriate
Therapy**

Case #1



∞ 50 year old man.....





Case #2



∞ 50 year old man.....

A



B



C





Case #3



∞ 50 year old man.....





Case #4



∞ 50 year old man.....



Case #5



∞ 50 year old man.....



Case #6



∞ 50 year old man.....



Case #7



∞ 50 year old man.....



Case #8

∞ 50 year old man.....



Figure 1
Knee monoarthritis with inflammatory signs.

Case #9

∞ 50 year old man.....







Case #10



∞ 50 year old man.....









Podagra