Office Orthopedics in Primary Care

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Disclosure

I have no financial interests or relationships to disclose.
Today’s Schedule

First Hour
Quick Updates from Previous Talks
Questions I Was Asked 2018-2019
Rather than my talk, I’m hoping to make this “your” talk
In other words, I figure if previous attendees didn’t know, there’s a good chance you also might not*

I am really looking forward to this!

Second Hour

Review of knee and shoulder exam and injection technique
What Do I Want You to Leave Here With?

- When you should NOT inject your patient
- Be able to counsel your patients whether or not PRP and/or stem cells will be helpful with their Orthopedic problem
- What are the most common shoulder exercises I recommend?
- 2020 treatment of Clavicle fx, simple injection of knees and shoulders
- And more

- Many slides have the reference so you can refer to it at a later date (2018, 2019, 2020 date in green)

Quick Updates from 2011 - 2020

- Collagenase Enzyme Injection
- Knee Walker
- Should they be a part of your practice?
Main de l’accoucheur

Dupuytrens

STAGES OF DUPUYTREN’S CONTRACTURE

STAGE 1
STAGE 2
STAGE 3
STAGE 4

0° – 45°
46° – 90°
91° – 135°
136° – 180°

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Dupuytren's Contracture

Dupuytrens Contracture 2011 - 2020

Thickened Tissue

Dupuytren's Contracture (Palpable Cord)
• Z-Plasty

Collagenase Enzyme Injection vs Z-plasty
Collagenase Injection

- “Cut my Dupuytrens surgery by 90%.”
- D.N. Hand Surgeon,
- Charlottesville, 2017

- Percutaneous Needle Fasciotomy, Sweden 2018
- Richmond 2019
- Your town?

Percutaneous Needle Fasciotomy

1) Hand prepped and draped
2) Small volume of steroid and carbocaine injected volarly and dorsally
3) Needle passed through cord repeatedly in several directions till it ruptures
Percutaneous Needle Fasciotomy

- Stromberg, et al. PNF vs Collagenase RX for Dupuytrens Contracture, JBJS 2018;100:1079 - 86
- 152 patients, allocated to PNF or injectable collagenase
- 97% examined at two years
- 58 patients (76%) of collagenase pts had a straight MCP joint
- 60 patients (79%) of PNF pts straight MCP joint
- No significant differences or pt reported outcomes at two years

2019 Course Participant Asked

- What’s the difference between Dupuytrens and trigger finger?

- OK, let’s talk about those two and throw in Dequervains for fun
Trigger Finger Treatment

- Early – decrease repetitive gripping or grasping, vibrating hand-held machinery
- Possible padded gloves, night splint
- Middle – injection. Effective for a year or more. May repeat.
- Late – percutaneous release (14g needle. Diabetic?) Surgical release through small open incision

DeQuervains Syndrome

Tendonitis on the radial aspect of the thumb/wrist
DeQuervains

Finkelstein’s Test

• Med RX
  • Thumb spica splint (store bought or fiberglass made by you)
  • 3 – 6 weeks till pain free then wean over two weeks
  • Highly successful. If fails, tendon sheath corticosteroid injection

• Surg RX
  • Release tendon sheath (not often needed)
Thumb Spica Splint

Make Your Own Thumb Spica Fiberglass Splint
2019 Course Participant Asked

• Distal Radius Fracture
  • In my older patients (older than this presenter?) how accurate does the reduction need to be? Can they have OK function if the bones aren’t perfectly aligned?

Distal Radius Fracture

• Although there’s a lot of variability, the old answer was “the most accurate reduction possible.”

• This might include surgery. Might include a fairly lengthy procedure with multiple xrays to get as close to perfect as possible.

• But further study has shown this may not be required in the elderly.

• “older patients were unlikely to have significant functional problems despite quite a significant amount of displacement.”

• Johnson, N. Pulvertaft Hand Centre, Derby, UK. WRIST Clinical Trial 2019
Distal Radius Fracture

- While I agree to some extent
- If you don’t do a lot of these, I’d suggest you send them to someone who does. They might be in the best position to determine what is an acceptable result.

Emily is an FNP from Maryland who has a history of hand pain for 2 months. She is active politically and plans to count ballots in the April 28th Maryland primary but is concerned that her pain may limit her. The pain is “on the thumb side of my wrist and hurts with use.” She thinks the hand and wrist look normal, there’s no weakness or numbness, fever or chills, clicking or popping, and if she holds it still there’s no pain. There’s no significant previous history.

By History Alone, Emily’s Most Likely Diagnosis is:

1. Dupuytrens contracture
2. Carpal tunnel syndrome
3. Trigger finger
4. DeQuervains Syndrome
Assuming, After Your Complete History and Physical Exam of Emily You Agree with This Diagnosis, Your Next Step Would Most Likely be:

1. A corticosteroid injection to reduce the inflammation
2. Thumb spica splint with instructions on its use
3. Physical therapy
4. Refer to kindly Dr. Post for surgery (payment due on Corvette)
Local Virginia Medical Supply Store 1/2020

- $25/week
- $80/month
- $249 purchase “if they want to have it after”

Rolling Walker (Patient safety - big concern – some patients do best with PT consult)
Walker with Wheels

Rolling Walker with Tennis Balls on Rear Feet
Walker with Nylon Skids

Loss of Mobility (Careful – will they really use it?)
References for “Back Home”

• Is there an orthopedic reference that would work well for me back home?

https://journals.lww.com/jbjsjopa/pages/default.aspx
One year JBJS JOPA CME Membership - $130
Submit Your Papers to Orthopaedic Nursing

www.orthopaedicnursing.com

https://www.acponline.org/clinical-information/journals-publications/books-from-acp or Amazon.com
Clavicle Fracture

Do we have a lower threshold for clavicle fracture surgery in 2020?

Not really.
Clavicle Fracture

Fractures displaced more than one shaft width have significantly greater union issues.

Lower non-union rate with surgery.* However, 10% reoperation rate. Do not advocate routine fixation for majority of patients.

117 patients, 1 year follow-up, 14.9% nonunion in the non-surgical group, none in the surgical group. AAOS Now, 9/2017
Clavicle Fracture

“If patients have high physiological demands shortly after surgery, high pain scores, or strong preference for surgery, early plate fixation can offer advantages.”

Aaron Rodgers, Green Bay Packers

DOI 10/15/17 Returned to play 12/17/17


The Boys, Lambeau Field in December. 10 Degrees!
My Patient is Going to have a TKR in a Couple Months. Can I Inject Them to “Tide Them Over?”

• Think twice before you do. Some studies have shown an increased infection rate with injections as far out as 6 months pre op.

• “Although the methodology is not without limitations, the authors have provided surgeons with the most compelling evidence to date that intra-articular injection of either corticosteroid or hyaluronic acid ≤3 months prior to a knee replacement puts the patient at increased risk of postoperative infection. Intra-articular injections should be considered a modifiable risk factor for infection in primary arthroplasty and should be avoided in the 3 months prior to a total knee arthroplasty.”

• Intra-Articular Injections Should be Avoided in the 3 Months Prior to Total Knee Arthroplasty T.S. Brown, JBJS AM, 2019 Jan:101A 198

When Can My Patient Drive After Hip/Knee Surgery?

• Meta-analysis of 19 studies
• Mean time to return to baseline reaction
  • Two weeks following rt sided THR
  • Four weeks following rt sided total knee replacement
  • One week following rt knee arthroscopy
• Patients should be individualized but these are useful guidelines
• JBJS 99-A, Number 18, 9/20/2017
Have I Ever Injected Zilretta-Triamcinolone Extended Release?

- Triamcinolone acetonide extended release – (Zilretta)
- 80% of pts with OA have symptomatic response to corticosteroid injs
- Last approximately 1 – 2 months
- Zilretta is a formulation of microspheres of triamcinolone acetonide (not intended for repeat administration)
- Cost: Zilretta - $570, single 32 mg inj once, “an entire season.”
- Cost: Triamcinolone, generic - $6.50
- Cost: Triamcinolone, Kenalog - $9.40
- The Medical Letter, Vol. 60, August 27, 2018

What are the Most Common Shoulder Exercises You Show Patients

- Easy
- Painless
- Inexpensive
Not the Most Common Shoulder Exercises
Three Quick Questions

• Is it true you can’t fly for 12 weeks after joint replacement? (theoretical risk of DVT)
• No. Study from a referral total joint center of 1,465 consecutive TKRs, 220 of whom flew home ave 2.9 days post op. No difference
Three Quick Questions

• Do Orthopedic implants set off metal detectors at the airport?
  • Total hip, knee and shoulder implants likely to be detected. Cobalt chrome or titanium. Stainless steel implants in foot and ankle, upper extremity, isolated wires, screws, etc. least likely to be detected.
  • Recommend surgeons provide pts with medical documentation and educate them to avoid unnecessary alarm activation by non-orthopedic metal like coins, cell phones and the like.
  • Contrary to previous findings, body mass index does not seem to impact the rate of detection

Three Quick Questions

• Is it true that women are at higher risk for ACL tears in non-contact injury?
  • Yes, two to four times more likely. BUT, the mechanism, cause of injury, is the same in both sexes. (Biomedical study, Duke 2018)
  • Landing on hyperextended knee
  • Devastating injury, potentially career-ending
  • Increases potential for osteoarthritis at an early age
  • Protect ACL, strengthening, proper landing techniques
How Important is it for Joint Replacement Patients to Stop Smoking Preop?

• Smoking should be discontinued prior to total joint arthroplasty as it increases the risk of infection, wound complications, and revision surgery. You have amazing leverage here! Provide perfect motivation. (VA ABC store kid – smoking.)

• TKA performed under mepivacaine spinal anes led to fewer episodes of straight cath (3.8% compared with 16.5%) and shorter length of stay when compared to bupivacaine

Is There a Role For PRP or Stem Cells in My Practice?
Platelet Rich Plasma

The Composition of Blood

PLASMA
Consists and between 52 and 55 percent of whole blood. It is a straw-colored fluid which
blood cells, proteins, and other substances are
automatically transported.

WHITE BLOOD CELLS
Leukocytes (WBCs) are less than 1 percent
of whole blood. These phagocytic cells
are specialized to fight off foreign matter.

PLATELETS
Thrombocytes (PLTs) are less than 1 per
cent of whole blood. These form clots. Blood
from existing veins.

RED BLOOD CELLS
Erythrocytes (RBCs) are less than 40 per
cent of whole blood. These cells carry
oxygen and are responsible for color.

PRP

STEP 1  COLLECTING BLOOD
A small amount of blood
(20-60ml) is drawn from
the patient's arm.

STEP 2  SEPARATING THE PLATELETS
The blood is drawn into a
centrifuge separating the
platelets from the rest of the
blood.

STEP 3  PLATELET-RICH PLASMA
The patient's own platelet-
rich plasma is now extracted
from the blood.

STEP 4  RETURN OF PRP TO THE PATIENT
The plasma is injected into
the injured area or
inflamed tissue.
Platelet Rich Plasma? Useful? Not?

• Has shown promise in the athletic population
• Platelets concentrated from patients own blood
• Does not “heal” arthritis or “give me a new knee”
• Symptomatic improvement for 2-12 months*
• Not covered by insurance
• Major problem with standardization/uniformity with both stem cells and PRP
• The message is promising but cautionary
• Hrivniak, D. MD, Team Physician, UVA Athletics, 2020

How About Stem Cells

*Symptomatic improvement for 2-12 months

WHAT IS A STEM CELL?
A mesenchymal stem cell is a primitive cell with the ability to:
- Reduce Inflammation
- Differentiate into Multiple Tissues
- Self Replicate
- Fight Apoptosis (Cell Death)

Bone
Cartilage
Muscle
Fat

dendritically
Stem Cells

• When your patient tells you they heard about using stem cells for their condition while on Facebook somewhere, you tell them:

• 1) When discussing stem cell therapy, it’s important to understand that pure stem cells are not currently available to U.S. patients outside of a clinical research study. A handful of clinical research trials, monitored by the U.S. Food and Drug Administration (FDA), are ongoing at this time to study stem cell treatment for arthritis. The early findings from these trials are encouraging.

• Unfortunately, the excitement surrounding emerging stem cell therapy has led some patients and health care providers to overlook the lack of scientific evidence to support its use at this time.

Charlottesville Daily Progress, April 4, 2019

• “When it comes to arthritic knees, stem cell treatments unproven.”

• “I am a professor of orthopedic surgery at the University of Virginia.”* I am also a victim of osteoarthritis and underwent total knee replacements for both my knees a little over a year ago. Since then I have made it my mission to educate the public about this condition, and try to keep the enthusiasm regarding new cutting-edge options in check. That is because I have seen many patients who have paid thousands of dollars for a so-called stem cell treatment only to discover later that they were duped.”

• Mark D. Miller, MD, S. Ward Cassells Professor of Orthopedic Surgery, Division Head for Sports Medicine at the University of Virginia

• *NCAA National Basketball Champions!
Should I Send My Total Joint Patients to the Surgeon Who Does Robotic Joints?

What total joint volume does your hospital do?

- CMS “found that higher-volume total joint arthroplasty hospitals have lower complications than low-volume centers. (>100 cases/year)

- 45% of hospitals were classified as low-volume and performed 12% of total joint arthroplasty cases.

- What do you want for your patients? JBJS, January 16, 2019

Should I send my total joint patients to the surgeon who does robotic joints?

- Depends whether it’s a TKR, total knee replacement or UKA, the unicompartmental knee arthroplasty – “half knee”
Should I Send My Patients to the Surgeon Who Does Robotic Surgery?

• “There remains little robust evidence to suggest that robotic assisted surgical procedures are superior to existing open or minimally invasive approaches.”

• Sheetz, K.H. JAMA, 5/25/2019, vol 321, #20

Should I Send My Total Joint Patients to the Surgeon Who Does Robotic Surgery?

• Negative – may need a pre-op CT (expense, insurance cover, radiation)

• Positive – May improve functional outcome by improving alignment in all planes, particularly in the lower volume surgeon

• Longer term follow up, say 10 or more years, needed to answer the question definitively AAOS Now, June 2019
Does a Partial Thickness* Rotator Cuff Tear Always Need Surgery?

• No

• Often a trial, of variable length from months to years, may be tried initially.

• “Immediate surgery compared with delayed repair of the rotator cuff has no difference in retear rates.”

• Tashjian, R. JBJS 2019; 101: 1799 – 1805

• *partial thickness – relate to hip labral tear- present, but is it the pain generator- full thick cuff tear not always the pain generator

How About Full Thickness Tears?

• Smith et al. compared 103 patients with small and medium RCTs with blinded follow up at 6 months, 1, 2, 5, and 10 years. The groups either had physical therapy or repair.

• At ten years, the results were better for the primary tendon repair group.

• Fourteen patients crossed over from PT to secondary surgery. Their final result was inferior when compared to the primary tendon repair group.

• Smith, JBJS 2019; 101:1050 - 60
Do Kids Who Play 1 Sport Year-round have More Injuries?

• Yes
• Touchy subject for many parents

• Early sports specialization is defined as “intensive year-round training in a single sport at the exclusion of other sports.”
• AOSSM consensus statement noted “increased risk for overuse injury and burnout.” “…relationship between higher training volumes and risk of injury. Increased psychological stress on young athletes who are participating in adult-driven specialized training and competition is also of concern.”
• Garvey, K MS and Matzkin, E MD 2018

Super Bowl LIV Quarterbacks

Patrick Mahomes drafted by Detroit Tigers in 2014
Jimmy Garoppolo played HS basketball

Neither were single sport HS athletes
Should My Patient with Bilateral Knee Arthritis have Bilateral or Unilateral Knee Replacement?

• Simultaneous – both replaced at same time. Often younger, healthier, non-obese, stiffness and pain, greater deformity such that correcting both knees leads toward better rehab.

• Staged – replaced at separate settings. Usually at least 3 months apart (usually)

Should My Patient with Bilateral Knee Arthritis have Bilateral or Unilateral Knee Replacement

• Advantages

• Simultaneous – single anesthetic, single operation, hospitalization, etc. Potential cost savings

• Staged – lower rate of infection, other complications. Shorter total hospital stay, simpler rehab
Should My Patient with Bilateral Knee Arthritis have Bilateral or Unilateral Knee Replacement

• Disadvantages

• Simultaneous – not recommended for higher risk patients, greater blood loss. Higher risk of cardiac and pulmonary complications. Higher risk of death. No higher risk of DVT.

• Staged – two of everything.

• Most of the docs I know prefer staged, not simultaneous, most of the time

Lateral Epicondylitis (Tennis Elbow)

Have I ever injected botulinum toxin into TE?

Uh, no

• Creuze et al. JBJS 5/16/2018
• Approx 50% relief, 20% cure rate in patients who’d tried other remedies
Lateral Epicondylitis (Tennis Elbow)
Medial Epicondylitis (Golpher’s Elbow)

• But, have I ever had my own elbow injected?

• Yes
  • First two times with steroid, third time with dextrose*

• All failed, surgical release 15 years ago

Lateral Epicondylitis (Tennis Elbow)

• Traditionally (it works)
• RICE
• Splinting or bracing
• PT/OT, heat, e-stim, iontophoresis, phonophoresis
• Strengthening
• Corticosteroid injection, possible PRP injection, other*
• Novel treatments emerging: PRP, percutaneous needle tenotomy
• Surgery
• *botulinum toxin, sucrose, dry needling, autologous blood, placebo
Lateral Epicondylitis (Tennis Elbow)

• Things to inject into your elbow
  • botulinium toxin, ozone, sucrose, corticosteroid, autologous blood, placebo, dry needling (swiss cheese?)

• Comparison of Autologous Blood, Corticosteroid, and Saline Injection in the Treatment of Lateral Epicondylitis: A Prospective, Randomized, Controlled, Multicentered Study

Let’s see how to fit this TE brace properly

Flexibility/hand squeezer
It’s a busy Monday morning and you’re behind. Again. As you open the door to room 3, reading the history of the patient within, you realize it’s your tennis buddy Clem who fell last night while trying to change a light bulb from a tall ladder. He’s cradling his left arm in what seems like modest pain. You immediately notice that the skin over the top of the left shoulder seems tented. He’s left-handed so you joke with him about finally taking a set from him on the court.

He was seen in Urgent Care last night and cleared of any head injury, cardiopulmonary issue or neurologic embarrassment.
After Your Exam, Negative for Accompanying Abnormality, and Consideration of the Various Forms of Treatment, You Would Most Likely Recommend Which of the Following?

1. Sling for 4 – 6 weeks
2. Figure of 8 strap for a month
3. Referral for surgical consultation and consideration of plate fixation
4. Instructions at self-immobilization and limited work duty

Your shoulder’s been hurtin’ a good while now, but you’ve just been too busy to tend to your own needs. You’d like to know what’s best for you right out of the box so before you see Dr. Post, you get your partner to order your own MRI*. It shows a medium sized, 2 cm full thickness supraspinatus tear without much in the way of glenohumeral arthritis, bony issue or AC joint pathology.

When you get to JP’s office, you expect to be told:

*did you follow protocol and get plain x-rays first?

1. With a little luck and the right supplements, this will probably heal on its own over time.
2. You’d predict a referral to Jenny, your PT of choice for a vigorous program at whose conclusion the tear will heal
3. For the best result long term, say 10 years, surgical repair is likely a good option
4. Regardless of treatment the tear will not heal
Do You Have to Fix a Bicep Tendon Rupture?

Biceps Rupture
Depends. Which End We Talking About? I Think the Questioner was Thinking Proximal

• Proximal rupture – long head of bicep, pretty common

• Distal rupture – avulsion from bicipital tuberosity, much less common (completely different injury/prognosis)

Do You have to Fix a Bicep Tendon Rupture?

• At the shoulder

• Sudden sharp pain in the upper arm
• Rarely complain of a “pop”
• Pain or tenderness anteriorly
• “Popeye” muscle
• Bruising, often extensive, over anterior arm and shoulder
Do You have to Fix a Bicep Tendon Rupture?

• At the shoulder

• The proximal bicep tendon tears frequently
• Tears can be either partial or complete
• Happens in the over 40 population
• Often associated with rotator cuff tears

Do You have to Fix a Bicep Tendon Rupture?

• At the shoulder

• Diagnosis usually clinical
• May be a role for an MRI to dx concomitant rotator cuff tear, but it’s definitely not automatic
Do You have to Fix a Bicep Tendon Rupture

• At the shoulder

• Most frequently treated non-surgically
• Surgical “tenodesis*” restores normal appearance of bicep muscle belly
• Surgery only increases supination power by a small percentage
• Most patients do well without an operation

* Tenodesis – upper end of tendon is sutured to humeral shaft

Do You have to Fix a Bicep Tendon Rupture?

• At the **elbow**

• Most powerful supinator of the forearm
• Different disease than the shoulder
• Avulsion of the tendinous insertion from the radial tuberosity
Bicep Tendon Rupture at the Elbow

Do You have to Fix a Bicep Tendon Rupture?

• At the elbow

• Unusual injury – 1-2 people per 100,000 per year
• Sensation of a “pop” in the elbow, altered anatomy
• Treatment – almost all of these require surgery
• Recovery takes several months but outcomes are usually quite good
• What about seen late? Say 3 months post injury?
Would I Biopsy a Mass if I Thought it were “Something Bad?”

• No

• Benign lesions are “way more common” than malignant ones by about 100 to one
• Hx, PE, imaging – then biopsy if needed
• Know that most suspicious masses need imaging (remember the source – KLW)
• Consider an MRI with contrast if you’re not quite sure, US for cysts
• If it worries you, refer. Peace of mind for both patient and you!

Do the “Half Total Knees” Last Very Long?

• 3 studies on UKA – unicompartmental knee arthroplasty
• #1 – 91% survival at 20 – year follow up
• #2 – 93% survival at 10 – year follow up
• #3 – significantly worse outcome for partial thickness cartilage loss
• #4 – at 3 years, BMI had no effect on revision rate compared to TKR
• JBJS, January 16, 2019

• Lancet – in a study of 300,000 TKRs and 200,000 THRs
• 60% THR 25 years, 70% 20 years, 90% 15 years
• 82% TKR 25 years, 90% 20 years, 93% 15 years
• In other words, using 2020 technique and materials, I would tell a patient that a total joint done today would last almost indefinitely!

What’s This with Outpatient Joint Replacement?

• Is a short-stay hip or knee replacement right for your patients?

• Outpatient hip or knee replacement surgery, also known as total joint arthroplasty (TJA), is now being performed in select centers on select patients who are healthy enough to be candidates for this pathway. These surgeries can be done at an ambulatory surgery center or an inpatient hospital.

• [https://hipknee.aahks.org/outpatient-hip-or-knee-replacement/](https://hipknee.aahks.org/outpatient-hip-or-knee-replacement/)
What’s This with Outpatient Joint Replacement

• Orthopedic surgeons agree that outpatient TJA should only be done on patients who are healthy enough to have surgery in such a setting and have the appropriate home setting/support to allow them to be discharged in this manner.

• This concept is new, and orthopedic surgeons are still clarifying how to maximize the benefits of this idea for patients.

• The entire health care team for an outpatient TJA must be adept at managing this type of surgical pathway.

Does My Patient with a First-time Shoulder Dislocation Need to have it Fixed?

• Recurrent instability at age 14 – 100%
• In patients <20 years old it is 72 – 100%
• In patients 20 – 30 years old it is 70 – 82%
• >50 years old it is 14 – 22%

• JBJS 2016 Apr; 4(2): 104 - 108
Does My Patient with a First Time Shoulder Dislocation Need to have it Fixed?

- Strongest predictors of instability
- Age<25
- Contact or collision sport
- Occupation/sport using arm at or above chest level
- In 2020, Arthroscopic repair most likely procedure but “method of treatment should be tailored to the patients age and functional demands….on an individual basis.”
- JBJS 2016 Apr; 4(2): 104 - 108

• Ellen, a 31 year-old family practitioner in the fifth row recently joined a big hospital system and has her workload expanded. Longer hours, carrying old heavy paper charts. Atraumatic onset of rt lateral elbow pain. No c/o distal NV issues, does not play tennis or any kind of racquet sport. Been doing a fair amount of work around the house building a shed, gardening, etc.

• Your exam: NV intact, FROM, pain on palp of lateral epicondyle, pain with blocked extension of the wrist, no change in appearance
Reportedly nl X-rays

Given the Above History, the Most Likely Diagnosis Would Be:

A. Early RA
B. Tennis Elbow
C. Dislocated Elbow
D. Possible Radial Head Fracture
E. Baker’s Elbow
Assuming This is Indeed Tennis Elbow, What We Would have as Our First Line of Therapy?

1. Rest, stretching, strengthening, possible TE strap/brace
2. Corticosteroid injection
3. Refer to Dr. Post for probably surgical release (payment due on motorcycle)
4. Botulinum toxin injection

Injections that Everyone in This Room Can Do
Skin Sterility

Although ethyl chloride is not sterile... did not alter the infection rates of shoulder or knee injections.
Exam

Shoulder Injection, Subacromial Bursa
Shoulder Injection, Subacromial Bursa

Seated, mark anatomy of posterior acromion, inferior edge, feel your acromion and soft spot

10 cc syringe, 21 g needle, 40 mg methylprednisolone, 8 or 9 cc’s 0.25 percent Marcain or 1% Xylocaine

After SAC injection, have the patient wait 10 to 15 minutes, put shoulder into previously painful positions. A change for the better can oftentimes be noted.
Subacromial Bursa Injection

Subacromial Bursa Inj Video #2
What the Patient Needs to Know After Steroid Injections
Anatomy Review

Exam

John Post, MD
Office Orthopedics in Primary Care
Knee Injection

Left Knee
Lateral Approach

Right Knee
Superior Lateral Aspiration Site
Fig. 207: Nerves and Vessels of the Posterior Thigh

NOTE: 1) the emergence of the posterior femoral cutaneous nerve below the inferior border of the gluteus maximus muscle and the infrapiriform nerve crossing anteriorly at this point.
Ultrasound Guided Injections

Probably the way of the future
Most studies compare US vs palpation injections of suprapatellar pouch
One study, 99 knees, 50 US guidance, 49 palpation
All with hyaluronic acid and contrast
USG 48/50 intra-articular, PG 41/49

I’d Like to Leave You with Two Thoughts

• Why women live longer than men

• The things you should takeaway from this 2 hours
Take Aways

• Dupuytrens – ship ‘em - start with percutaneous needle or an injection, bracing ineffective

• Clavicle Fx – plating may be the best option for a high demand patient or those desirous of an anatomic reduction, but generally treatment is non-operative. If in doubt, ask.

  Stem cells – not ready for prime time in Rx of arthritis – but stay tuned a few years. Discourage pts from spending $1000s on unproven care

• Total Joints – don’t inject closer than at least 90 days ahead of surgery

Take Aways 2

• Many a replaced total joint (knee) does not function painlessly

• Main determinant in sports participation after joint replacement is preop sports participation

• Outpatient/short stay joint replacement is here to stay

• Benign lesions are “way more common” than malignant ones by about 100 to one. Kristy Weber, MD President AAOS

• 90% of total knees last 20 years, 82% in place at 25 years. And it’s only getting better.
Short Stay Hip and Knee Replacement:

1. Is here to stay most likely
2. Includes the entire health care team of Primary Care provider, Orthopedic Surgeon, Anesthesiologist, Nursing Team, friends and family
3. Is not for everyone
4. Has the potential to reduce the cost to the health care system
5. All of the above

When Considering a Referral for Your Patient Who May Be a Candidate for Joint Replacement:

1. Where/to whom you refer the patient isn’t all that critical as most orthopedic surgeons are board certified
2. CMS “found that both high volume and low volume hospitals have about the same complication rates
3. Most all patients can be candidates for this new-fangled short stay stuff
4. A modern replaced joint has a good chance of lasting 20 or more years.
When Am I Least Likely to Repair a Bicep Tendon Rupture?

1. At the shoulder (long head of the bicep)
2. At the elbow (bicep insertion into the radius)