Occupational Injuries

Are they related…and some other stuff

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Managing Partner, Midwest Orthopaedics at RUSH
Team Physicians, Chicago White Sox and Chicago Bulls

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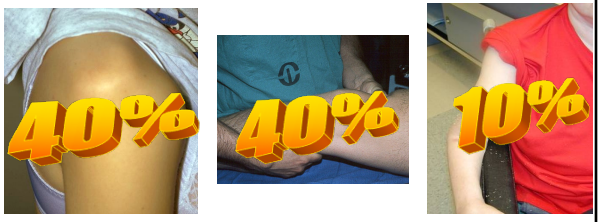
Clinical Practice



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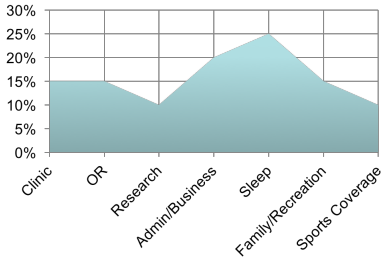
Time Management



21 yrs at 54 yrs

Personal Inventory

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Profile

- ✓ WC 30% of practice
- ✓ 500 IMEs
- ✓ 10,000 OV/Year
- ✓ 70% Defense
- ✓ 30% Petitioner
- ✓ 80% Causality
- ✓ O.S. Record reviews
- ✓ Other expert work

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My Philosophy…
On my shirtsleeve ☺

1. Occupational injuries can be treated similar to an athlete's injury.
2. While I wish the system in Illinois were different (apportionment, opportunities for early RTW programs, better petitioner education, more accountability and incentive for RTW FD), I remain objective in my decision-making related to causality, RTW, MMI projections and impairment assessment.
3. I use EBM whenever possible in decision making. I have published more than 1000 scientific articles. Our scientific burden is 98% certainty. Yours is "more likely than not….51%" Completely different paradigm, but I remain fair and try not to embarrass myself ☺
4. I rarely know (nor care) who has referred the patient (Defense, Petitioner, Insurance Company, Self-referred, etc).
5. I assume all patients provide legitimate perceptions of their condition until proven otherwise, even in the absence of objective findings.
6. I am tough on patients when the time is right to RTW even when not "100%." People can live and work in pain and need to know that doing so does not further their condition.

Orthopedic Surgery is a Commodity

It is all about decision-making

"The art of medicine consists of amusing the patient while nature cures the disease"

- Voltaire

A little reassurance goes a LONG way!

The business I am in…

Clinically Relevant ▲

Surgical Philosophy

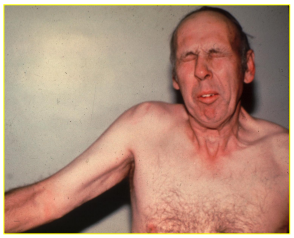
1. Do you need treatment"
2. Have you failed non surgical treatment?
3. Is the condition unacceptable?
4. What would you like to see improve? (Patient-Centered Approach)
5. Is this treatment going to predictably deliver what you are looking for with minimal risk and "meaningful" upside?

Shoulder Pain

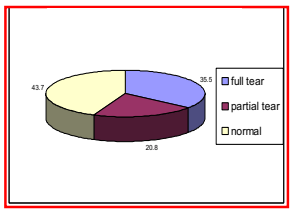
Longitudinal Study (1938-1988)

Men: 15%

Women: 9%



If you have a RCT, what is going on in the other shoulder?

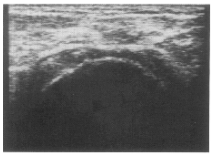


Yamaguchi, Galatz, et al.JBJS, 2006

Age-Related Rotator Cuff Tears

Frequency of RCT asymptomatic volunteers

- 13% age 50–59
- 20% age 60–69
- 31% age 70–79
- 51% age 80–89



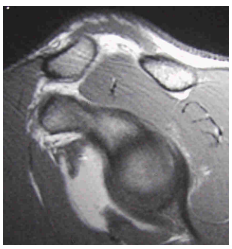
Prevalence
Is the cuff tear responsible for symptoms?

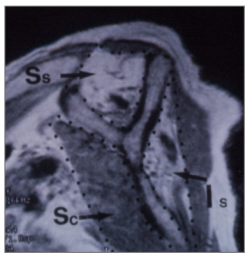
How many people have cuff tears?
- 10% of those over 60 (conservative est)
- 5.7 million Americans

How many people have surgery?
- 270,000/year

How many cuff tears have surgery each year?
- <5%

Dating a Rotator Cuff Tear





Rotator Cuff Tear and Pain
Not a strong relationship

Natural History
- Progression with and without Pain
- Pain with and without Progression

Cuff Tear Severity Does *NOT* Correlate with:
- Pain Severity [1]
- Duration of Symptoms [2]
- Patient Activity Level [3]

1. Dunn et al JBJS 96(10):793-800, 2014
2. Unruh et al JSES 23(13):1052-8, 2014
3. Brophy et al AJSM 42(5):1150-4, 2014

What about function…and failure?

1997

Re-tear?

2010

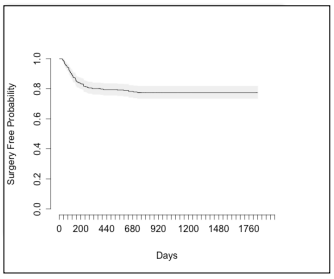
Rotator Cuff Tear and Pain

HEALED vs FAILED CUFF REPAIRS

- Patient outcomes are identical
- Pain scores are identical
- Strength is better if repair is Intact

Russell et al. JBJS 96(4):265-71, 2014
Slabaugh et al Arthroscopy 26(3):393-403, 2010

Is PT an Option?



N=219, 85% follow up

<80% had surgery and most did so in first 12 weeks

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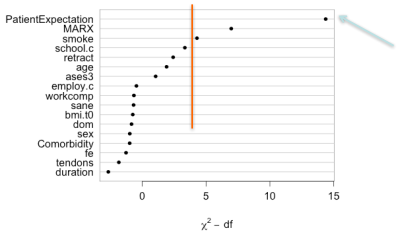
Who fails therapy?
Patient Expectations

Patients who thought therapy would not help

NOTHING TO DO WITH CUFF TEAR ANATOMY!



History

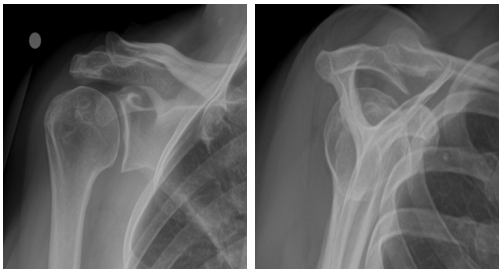
- 6 months of shoulder pain, worse after a fall 3 weeks ago, right > left
- Known Left RCT (nonop) from 10 yr ago
- Night-time pain
- Overhead pain
- Pain with trying to do a "ponytail"

55yo F with bilateral shoulder pain, R>L

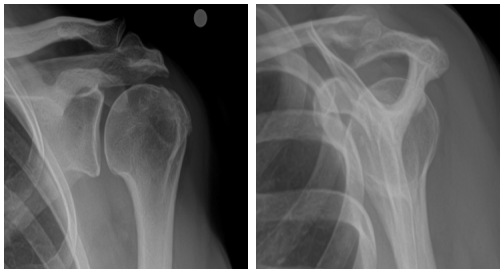
Physical Examination

- No atrophy
- Right:
  - FE 155, ER 60
  - 5-/5 cuff strength
  - + Neer/Hawkins
  - -BG/ACJ TTP
- Left
  - FE 155, ER 60
  - 5-/5 cuff strength
  - + Neer/Hawkins
  - -BG/ACJ TTP

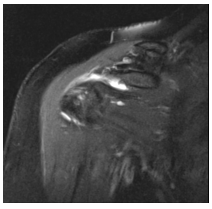
X-Rays - right



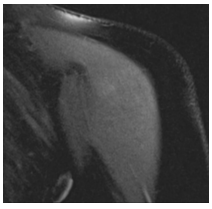
X-Rays - left



MRI



RIGHT



LEFT

What Would You Do?

What was done → subacromial injections

After bilateral SA space injections…

History

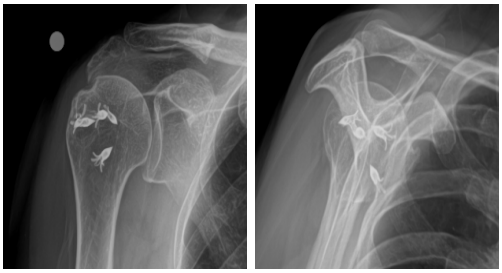
- 63yo F, RHD
- History of open RCR in 2004 (outside surgeon)
- Work-related injury 2014
- Underwent arthroscopic RCR with supra-pectoral BT in 2015 (outside surgeon)
- Continues to have anterior shoulder pain with lifting and overhead activities

63 yo F with right anterior shoulder pain, history of 2 prior RCR surgeries

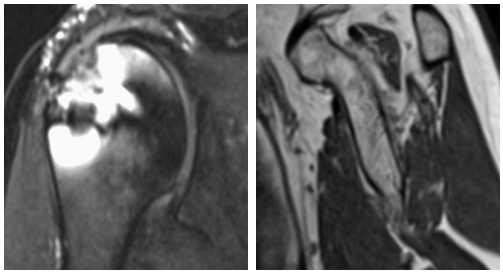
Physical Examination

- Prior incisions CDI
- FF 155
- ER 45
- 5-/5 cuff strength
- + Neer/Hawkins
- + Speeds
- Tender over biceps groove

X-Rays

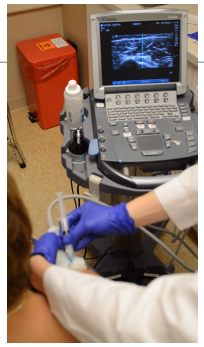


MRI



What Would You Do?

What was Done → Biceps injection



After biceps sheath injection…

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Indications for surgery

- **Acute tears**
- **Weakness or Functional Loss**
- **Patients who "want" surgery**
- **Others…speculative:**
  - **Prevent progression?**
    - **How much progression is meaningful?**
    - **Who is at risk?**
    - **Does surgery prevent progression?**

    WE NEED DATA!

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Informed Consent…

"You have a rotator cuff tear. So do 6 million other Americans. Only 5% of those have surgery.

If your problem is *WEAKNESS* or *FUNCTIONAL LOSS* you should have surgery, although there is a chance the repair will fail (overall 30%). I don't know how to predict this, although larger tears in older people fail a lot.

If your problem is *PAIN*, you have an 80% chance of getting better with therapy, and the pain relief seems to last at least five years. If you are not satisfied with the results of therapy, you can still have surgery.

If you chose to do therapy, there is a risk that your tear could progress. This might lead to symptoms. We don't yet know how to predict if your tear will progress, or if you will have symptoms if it does progress."

Imaging and Knee Pain
Osteoarthritis and Meniscus Tears

No reliable correlation between clinical symptoms and articular cartilage status
- Zamber et al

Beware of Barf and patients who Vomit

BARF
Brainless Application of Radiological Findings

VOMIT
Victim of Modern Imaging Technology

Richard Hayward, BMJ, 2003

"If I continue to stay active will I make it worse?"

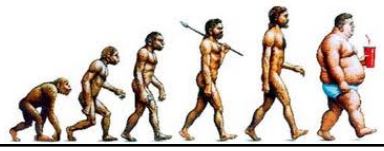
Sports participation and the risk of knee osteoarthritis: A critical review of the literature
Alentorn-Geli E, Cole BJ, Cugat R

Systematic review of the 45 articles discussing the relationship between sports and osteoarthritis of the knee

1. **Literature fraught with complex interaction of independent variables and retrospective case series without matched controls**
2. **Obesity and previous knee injury with greatest association**

Insufficient evidence to suggest that sports clearly increases the risk of knee OA

Obesity
Biomechanics or Biochemistry?



The 6th Vital Sign

Weight Loss Reduces Knee-Joint Loads in Overweight and Obese Older Adults With Knee Osteoarthritis

Stephen P. Messier,[1] David J. Gutekunst,[1] Cralen Davis,[1] and Paul DeVita[2]

Talk to your patients

1. **One visit**
2. **6 months of life-style change**

No knee pain and no surgery

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Surgery versus Physical Therapy for a Meniscal Tear and Osteoarthritis

Jeffrey N. Katz, M.D., Robert H. Brophy, M.D., Christine E. Chaisson, M.P.H., Leigh de Chaves, P.T., O.C.S., Brian J. Cole, M.D., M.B.A., Diane L. Dahm, M.D., Laurel A. Donnell-Fink, M.P.H., Ali Guermazi, M.D., Ph.D., Amanda K. Haas, M.A., Morgan H. Jones, M.D., M.P.H., Bruce A. Levy, M.D., Lisa A. Mandl, M.D., M.P.H., Scott D. Martin, M.D., Robert G. Marx, M.D., Anthony Miniaci, M.D., Matthew J. Matava, M.D., Joseph Palmisano, M.P.H., Emily K. Reinke, Ph.D., Brian E. Richardson, P.T., M.S., S.C.S., C.S.C.S., Benjamin N. Rome, B.A., Clare E. Safran-Norton, P.T., Ph.D., O.C.S., Debra J. Skoniecki, M.S.N., A.N.P., Daniel H. Solomon, M.D., M.P.H., Matthew V. Smith, M.D., Kurt P. Spindler, M.D., Michael J. Stuart, M.D., John Wright, M.D., Rick W. Wright, M.D., and Elena Losina, Ph.D.

2013

- ✓ **Multicenter trial 460 patients > 45 y.o. w OA and meniscus tear**
- ✓ **Randomized to PT/Injection vs Early Scope Debridement**
- ✓ **Outcomes similar at 6 and 12 months**
- ✓ **30% of non op group crossed over to surgery group to achieve their desired result**

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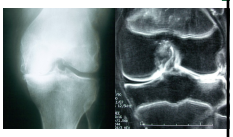
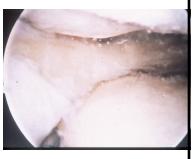
2013

Osteoarthritis and Meniscal Tears



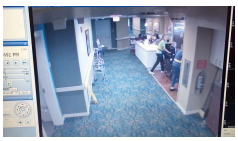
- ✓ Co-exist > 85% of the time
- ✓ Post-arthroscopy #1 reason for 2nd opinion (and unhappy patients)
- ✓ Meniscus tears will not be made worse by neglecting them
- ✓ Conservative treatment is S.O.C.
- ✓ Conservative treatment works!
- ✓ Patients don't have to be "cured" they just need to feel better!



Sometimes doing less…does more!

The IME

- Records in advance
- Short factual and unbiased cover letter
- Flag important records
- Eliminate unrelated records
- Include important facts to clarify
  - DOI
  - MOI
  - DOR
  - Injury report form



The IME

History – 85% of decision-making

Focus: MOI, symptom onset, timing of pre-existing hx

PMH: Co-Morbidities (DM, BMI, Claim Hx)

Medical Record Review

Physical Exam

Radiographic Studies

Assessment

Discussion/Plan/Causality/MMI/RTW Status/Impairment

The Terms

- Aggravation
- Acceleration
- Temporary
- Permanent
- "But not for the injury"

Ground Rules

We are all professionals and decent people…

- ✓No fighting
- ✓Avoid interrupting one-another
- ✓It isn't personal…but thick skin will help ☺
- ✓Be respectful…if possible…
- ✓Have fun!

Case 1 Causality

49 y.o. male truck driver R shoulder injury

MOI: fall in truck July 2012 denies prior history

- Immediate R shoulder pain
- 6'1", 325 lb, morbidly obese (BMI 48), DM, renal failure
- XR: mild OA, MRI intact RC
- Fails injection and attempted PT and has Jan 2013 scope "clean-out"
- 50% better by Sept 2013 (8mo post)
- RTW FD for 5-6 mo w/o care

Case 1

5 mo later, steps off curb at work, knee-gives way, re-injures R shoulder and NEW Right knee pain

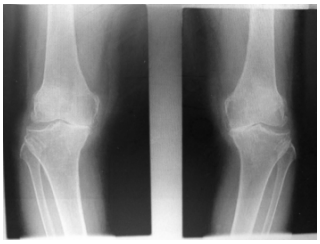
- Awaiting kidney transplant for chronic renal failure
- XR: bilateral bone-on-bone OA
- Denies previous knee issues
- Fails PT, NSAIDs, cortisone injection over 7 mos
- Using cane to ambulate; seen in wheelchair in office
- Seen for 4th IME 9/2014
- Treating MD: "TKR for "traumatic cartilage damage caused by fall"

Case 1

But not for the Injury?

Considerations

- ✓ Co-morbidities
- ✓ MOI (giving way)
- ✓ Severity of disease
- ✓ Relatedness
  - Initial Treatment?
  - TKR?



Case 1

Comments?

My Opinion

"Relatively innocuous MOI of knee giving way while stepping off a curb. Allegedly occurred at work, but certainly not unique to the work environment. Aggravation of advanced arthritis in association with comorbidities of chronic renal failure, diabetes and morbid obesity. In my opinion, the claimant would have arrived at a need for care for the right knee in the near future, even absent of this injury. I cannot categorically state that the injury in question in February 2014 really changed the fate/natural history of the right knee to any large degree, but rather simply might have brought the claimant to a need for care somewhat sooner than otherwise might have been necessary."

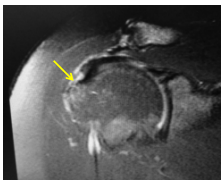
Case 1

Comments?

Case 2
Return to Work

48 y.o. RHD F machine operator, employed 5 years at job, 1st time injury R shoulder Jan 2013 while lifting 14-20 lb items from floor to counter level

- Alleges 1 single lift caused acute onset pain
- Cortisone injection 4 hr relief
- Fails PT x 6 wks
- MRI shows small RCT
- XR normal
- 5'2" 190 lbs Hx HTN, DM
- Treating MD: "RCR"



Case 2

5/2013: ARCR, SAD, biceps release, capsular release

- PT x 1 year + work conditioning

- RTW @ 1 yr post-op to "inspector role" nothing overhead, no lift > 30 lb @ MMI

- As of 9/2014 IME, still alleges 5/10 intermittent pain as an inspector

Case 2

Return to work discussion

Job description: 40 lbs lifting 200-300x/day

FCE being recommended by adjuster

- Will FCE show accurate and "valid" representation of her work capacity?
- Will FCE risk "over-limiting" her?
- Will FCE risk re-injury to R shoulder/ L shoulder?

My Opinion

"Assigned reasonable permanent restrictions allowing her to continue as an inspector. Unknown if she can perform the full duties as a press operator in clinic setting. She has to lift up to 40 pounds on a relatively frequent basis 200 to 300 times daily.

If more granularity regarding her restrictions are needed to hone in with greater specificity of her restrictions or for the process of resolving her case, then a job-specific FCE would provide that level of detail.

Note that the taxing nature of the FCE would not only subject her to incurring further injury but also may risk restricting her beyond even what she is doing now in her inspector capacity. I think it is more than reasonable to leave her at her current restrictions and let her work in that position, but again if more specificity is required, then a job-specific FCE would be necessary."

Case 2

Comments?

Case 3
Causality

61 y.o. M "technician" > 20 yr for home living services company

Job Description: Installs ramps + wheel chair elevators outside homes of disabled individuals. Carries/lifts 70-80 lbs regularly

PMH: 2007 – Non-work injury R knee
– Scope and FD RTW
"never felt quite right ever since".

- July 2014 atraumatic worsening R knee pain due to "cumulative nature of job"

Case 3

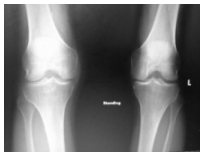
Other Notables

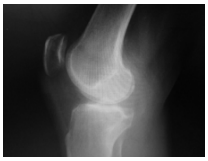
- Was playing men's softball > 1 year ago and "doing okay", but noted progressive worsening of pain in the knee over 1-year period prior to July 2014 report of pain

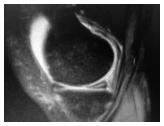
- 2010: HA and cortisone injections BOTH knees

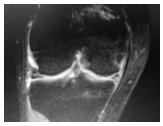
Case 3

Imaging



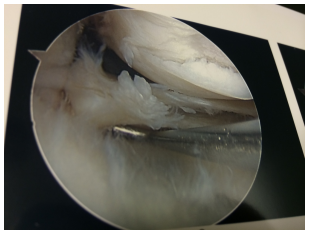


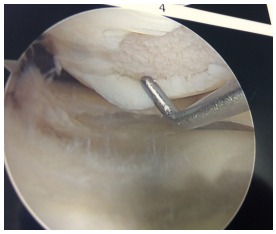




Case 3

R knee scope 8/21/14
(Date of report 7/2014)





Case 3

Comments?

My Opinion

61 y.o. M who has been working for this company for a prolonged period of time. History of non-work injury in 2007. Over a progressive period of time increasing right knee pain and swelling. Was playing softball approximately 1 year ago but because of progressive discomfort, unable to continue. The date of report, of 07/29/2014, was done so at a time when he stated that the symptoms rose to a level that he felt he needed to deal with this. He denies any significant injury. Indicates that he believes the activities at work, squatting, kneeling, weather related changes, have caused his condition. In essence, absent of a single event, I cannot say that work has categorically led to the need for treatment in this particular individual.

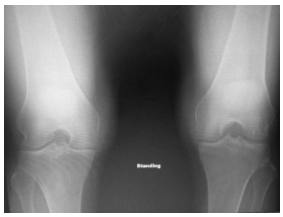
While the work environment that he describes is somewhat unique compared to activities of daily living, the extent of disease in his knee might or could become symptomatic outside the workplace given the underlying degree of osteoarthritis. There is no data to state a clear correlation between activities and OA progression. In general, those with arthritis, who are active, can manifest symptoms in proportion to their level of activity. The problem is that threshold is different for any individual, and it could easily occur outside the workplace given the disease progression based upon its own inherent natural history absent of work as well as occurring in the workplace. Therefore, in no way was his osteoarthritis caused in the work setting nor dispositively aggravated.

Case 3

Comments?

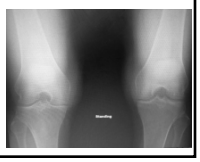
Case 4
Causality

53 yo male truck mechanic of 20 years, no previous history
- 2/13/14 Slips on ice in parking lot; immediate L knee pain
- Seen at local ER and L knee XR obtained



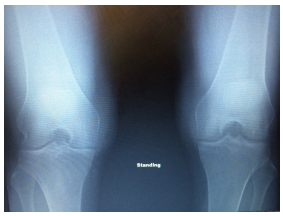
Case 4

- DOI 2/13/14
- L knee scope 3/18/14 – Arthritis in all compartments
- Between DOS and Aug has cortisone and HA injections
- Reports 80% relief by Aug 2014; RTW FD and MMI
- Regresses just 3 wks later and RTC
- TKR recommended
- 6' 0" 232 lbs BMI 31.5



Case 4

Comments?



My Opinion

"Mr. Smith incurred an aggravation of preexisting condition. I believe that this brought him to a need for care that otherwise might not have been necessary absent of the injury.

He has aggravated symptoms consistent with osteoarthritis. He has failed to thrive despite arthroscopy, cortisone injection, hyaluronic acid injections, and anti-inflammatories.

I believe his next means for definitive management is a total knee replacement of the left knee. This would be due to the ongoing aggravation of his pre-existing condition occurring in the work place."

Case 4

Comments?

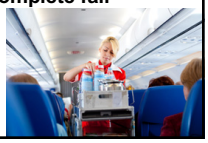
What if…..

His initial treatment rendered him symptom free for 12 months and his symptoms upon his own admission began insidiously with activities of daily living?

Case 5
Causality

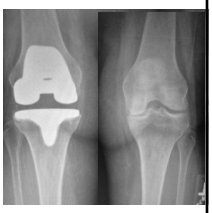
64 yo F flight attendant x 18 yrs denies prior L knee

- Prior R TKR work-related 10 years prior
- L knee pain Dec 2013 "while pushing cart in aisle"
- Sees MD, no treatment needed, pain subsides
- Late Dec 2013, layover in Seattle, slips while exiting hotel bathtub and incurs twist w/ incomplete fall
- Notices L knee pain while walking to flight later that am
- MRI → subtle MMT and DJD



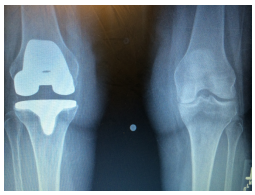
Case 5

- Has PT, no injection, no relief
- L knee scope: March 2014
  50% MMy and OA
- Post-op: 3 HA and 2 cortisone injections
- 5'6" 211 lbs BMI 34
- L knee pain now "relentless" 7/10



Case 5

Comments?



Case 5

Comments?

My Opinion

"At this point, Ms. Smith's L knee has failed to respond after arthroscopy, cortisone injections, aspirations, hyaluronic acid series, and physical therapy. At this point, I do believe her means of definitive management will come through a TKR of the left knee, and it is my opinion that this need for treatment is not related to the duties of her job. The aggravation of preexisting condition that occurred to incite pain related to her left knee DJD was a simple slip while exiting a bathtub. She was attending this hotel for work-related reasons in her capacity as a flight attendant, but I cannot state that there is anything inherently unique about that work environment related to her duties as a flight attendant and this injury could have easily happened anywhere in any environment in a similar scenario, related to her employment or not.

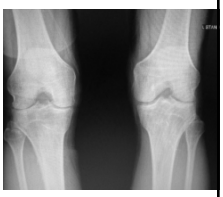
Case 6
Mechanism of Injury

61 yo M airport ramp service agent x 4 years

- Acute R knee pain 10/25/12 while stepping into "tug"
- R knee scope in 80's with full resolution
- R knee scope Feb 2013 with relief
- Sept 2013 IME: RTW FD MMI
- No Tx for 6-8 months
- 2nd opinion late 2013
  "TKR future option"
- CC: as of Oct 2014
  Ant-Medial Rt knee pain
- Working FD now w/ mild pain

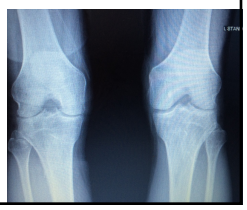
Case 6

- 5' 7" 170 lbs BMI 26.6
- XR: moderate OA
- PE: Full ROM, no swelling



Case 6

WHAT NEXT FOR TREATMENT?
IS IT RELATED?



My Opinion

"The treatment to date has been due to a work-related aggravation of a pre-existing condition. The claimant is at MMI now for the right knee and does not need further treatment as his symptoms do not rise to a level warranting care in his opinion; a right TKR will be necessary when the claimant is ready, but this is not related to the work injury as readiness will be due to the natural progression of increasing symptoms due to the underlying disease absent of a new injury in the work place."

Case 6

Comments?

Case 7
Causality / End of Treatment

49 y.o. M material handler x 2 years w/ 1st time R shoulder injury lifting 190-lb roll of "fabric" Nov 2012

- MRI: OA, tendonitis, no RCT
- Jan-Aug 2013 "successfully" treats Injections and PT
- Aug 2013: Doing well, MMI, FD

Case 7

My IME

"Injections helped about 6 mo, still having some pain but agreed to FD RTW"
- 8 month paucity in records
- Claimant does NOT work during this gap as company relocated
- RTC April 2014 with pain/ stiffness

Case 7

- Claimant is treated again May 2014 with cortisone injection but fails to thrive (never RTW)
- IME Oct 2014 shows ROM loss, pain
- Treating MD: Arthroscopic treatment

Case 7 Scenario A

ASSUMING HE DID HAVE PAIN RELIEF AS OF RELEASE DATE/ MMI IN AUG 2013, AND CONSIDERING 8 MO GAP IN PURSUIT OF TX

IS NEED FOR FURTHER TX RELATED?

My Opinion

No

Case 7

Comments?

Case 7 Scenario B

ASSUMING WHAT THE CLAIMANT ALLEGES – AND HE STILL HAD PAIN AS OF AUG 2013, AND INJECTIONS HELPED 6 MOS BUT "NEVER WAS GREAT"

IS NEED FOR FURTHER TX RELATED?

My Opinion

YES

RUSH UNIVERSITY MEDICAL CENTER

Midwest Orthopaedics at RUSH

Case 7

Comments?