Clinical Correctional Conundrums

Rebecca Lubelczyk, MD, FACCP, CCHP-P
Utilization Management Medical Director
Centurion

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DISCLOSURE

I do not have any relevant financial relationships with any commercial interests.

Educational Objectives

- Be able to identify several medical conditions that are uncommon in the non-incarcerated population
- Use history and physical exam skills to diagnose "jailhouse rash," "weightlifter's shoulder", tinea versicolor, and other conditions
- Discuss ways to manage these clinical conundrums
- Provide education to the patient on how to prevent these clinical conundrums

24-Year-Old Male With Right Flank Pain

- 24-year-old male with no significant PMH who presents with 8 hours of right flank pain, progressively worsening
- Pain is 7/10, achy in nature, constant
- Worse with trunchal twisting motion, straining to urinate or defecate, lying down does not seem to make it better

Initial Differential Diagnosis

- Renal – kidney stone, infection (cystitis, pyelonephritis)
- Musculoskeletal – acute strain, herniated disc
- Gastrointestinal – liver capsule irritation, duodenal ulcer
- Pulmonary – lower lobe pneumonia, pneumothorax
- Dermatologic – painful skin lesions such as shingles

Review of Symptoms

- No fever/chills/sweats
- No nausea/vomiting, constipation/diarrhea
- No pain with urination
- Urine is reddish-color
- No shortness of breath but pain limits ability to take deep breath
- No radiation of pain (seems localized to right flank)

PHYSICAL EXAM

- Well-developed, very muscular male appearing stated age
- Grimaces slightly with moving to
- lie down, sit up, turn
- VS – 136/80 P 76 R14 T 98.2 O2 sat 98%
- Back exam – skin intact, no lesions or rashes, possible fullness/swelling to right mid/lower paraspinal area, palpation reproduces pain
- + CVA tenderness on right flank
- Lungs clear except dry bibasilar rales

Initial Differential Diagnosis

- Less likely infection due to lack of fever, chills, pain with urination
- Less likely skin issue since skin is intact
- Less likely GI since not associated with food, no N/V/D/C
- Less likely pulmonary since not associated with cough, SOB
- More likely renal such as kidney stone
- More likely musculoskeletal

Testing to Confirm Diagnosis

- Urine dip – Positive for blood, negative for leukocyte esterase, nitrates, protein, bilirubin, glucose
- Microscopic urinalysis (send out lab) – negative for red blood cells
- Final diagnosis – rhabdomyolysis of the back muscles

RHABDOMYOLYSIS

- Breakdown of muscle tissue due to lack of sufficient blood supply usually due to compression of the vascular system
- Can be seen after excessive or intense exercise
- Presents a localized achy pain, affected area can be swollen
- U/A dip is positive for blood but is not because of hematuria but because of myoglobin from muscle
- Myoglobin cross-reacts with sensor for hemoglobin on urine dipstick
- Must perform U/A microscopic to look for RBC's and if there aren't any, likely myoglobin
- Ask patient "What have you done differently?" "What changed recently?" to help with dx

24-YO MALE WITH CHEST PAIN

- 24-year-old male with PMH of recent rhabdo presents with chest pain that started this morning when he woke up
- Pain is sharp in nature, somewhat tight, 8/10
- Located across the chest, bilaterally
- Worse with changing positions, taking a deep breath, coughing
- Exercises regularly but hasn't in a couple of days as he has been recovering from his rhabdomyolysis
- Never gets pain with exercise

Initial Differential Diagnosis

- Cardiac – heart attack, pericarditis
- Pulmonary – pneumonia, pneumothorax
- Gastrointestinal – gastric ulcer, esophagitis, GERD exacerbation
- Musculoskeletal – costochondritis, pain from excessive coughing
- Dermatologic – painful skin lesions such as shingles

Review of Systems

- No fever/chills/sweats
- No n/v/constipation/diarrhea
- No shortness of breath but pain limits ability to take deep breath
- No radiation of pain down left arm
- No cough
- No change with eating/drinking
- Pain increases with sitting up from lying position or lifting something with arms

Physical Exam

- Well-developed, very muscular male appearing stated age
- Grimaces with moving to lie down, sit up, turn, take deep breath
- VS – 136/80 P 76 R 14 T 98.2 O2 sat 98%
- Cardiac – RRR, normal S1 S2, no M/R/G
- Lungs clear except dry bibasilar rales
- Chest – skin intact, no lesions or rashes, no tenderness to palpation of the costochondral junctions, palpation of the intercostal muscles reproduces pain

Initial Differential Diagnosis

- Less likely infection due to lack of fever, chills
- Less likely skin issue since skin is intact
- Less likely pulmonary as no reported cough, SOB
- Probably not cardiac but not ruling it out yet
- More likely GI since not associated with exercise, has history of GERD, occurred early in am when stomach void of food
- More likely musculoskeletal due to reproducible pain

Testing to Confirm Diagnosis

- EKG – normal sinus rhythm, rate of 85, normal axis, non-specific T-wave changes, no peaked T's, normal voltage
- Chest x-ray (if available) – clear lung fields, no infiltrates, no cardiomegaly, no rib fractures

- Final Diagnosis – Acute spasm of the intercostal muscles

Intercostal Muscle Spasm

- Sharp pain across chest 2-3 days after last work out
- Unusual presentation: not present during exercise
- More acute/severe than day after post-exercise ache
- Intercostal muscles are conditioned by regular chest exercises to build energy stores for daily release
- After 2-3 days of no exercise, muscles spasm in order to release the energy stores causing sharp intense pain
- Will resolve on own over next 24 hours
- Ask "What have you done differently?" "What changed recently?"

24-YO MALE WITH SKIN RASH

- 24-year-old male with PMH of rhabdo and acute intercoastal muscle spasm presents with several weeks of a skin rash
- Had it at the previous jail and tried oral antibiotics, antibiotic ointment, anti-fungal creams and steroid creams
- Creams did not help much but the antibiotic pills seemed to clear it up however the rash came back after the antibiotic prescription ended

Review of Systems

- No fever/chills/sweats
- No n/v/constipation/diarrhea
- No shortness of breath, no cough
- No problems with eating/drinking
- No dysuria, nocturia, hematuria
- No joint pains or swelling
- Rash is a little itchy, especially right after a shower
- "I only get this when I come to jail"

Physical Exam

- Well-developed, very muscular male appearing stated age
- VS – 125/68 P 68 R14 T 98.6 O2 sat 98%
- Skin – Rash is located on back, shoulders, chest, upper abdomen, upper arms, thighs, and buttocks
- Face, neck, hands, feet, and distal extremities are spared
- Maculopapular 2-3mm lesions scattered in random distribution, reddish, some with mild surrounding erythema
- No vesicles seen, no weeping of lesions present
- Appears located at or near follicles
- Cardiac and lung exam unremarkable, no oral lesions seen, joints do not appear swollen

Initial Differential Diagnosis

- Insect/Parasite Infestation – scabies, fleas, bedbugs
- Infection – folliculitis, cellulitis, shingles
- Allergic reaction – medication, soaps, lotion, pollens
- Systemic – rheumatoid disorder, diabetes, inflammatory bowel disease

Working Differential

- Less likely infection due to lack of fever, chills
- Less likely systemic since not associated with cough, joint symptoms, GI symptoms, symptoms of diabetes

- More likely infestation
- More likely allergy or dermatitis

Testing to Confirm Diagnosis

- UA dip negative for glucose, leukocyte esterase, nitrates
- Serum chemistries all within normal limits
- CBC within normal limits
- Previous treatments for tinea, eczema, allergic reaction had minimal efficacy and were short-lived
- Suggest treatment for scabies to which patient replies "I did that twice at the other jail. That didn't work either".
- The two roommates have no similar lesions

PSEUDOFOLLICULITIS

- Irritation of the hair follicles not solely due to staph or strep infection
- Often by increased exposure to hot shower water
- Often correctional facilities are on well water which may exacerbate skin reactions due to the chemical treatments necessary to make water potable
- Patients often take more frequent, longer, hotter showers, particularly after work-outs, to be "cleaner" as well as sooth sore muscles
- Higher pressure shower heads contribute to the irritation

PSEUDOFOLLICULITIS MANAGEMENT

- Resistant to traditional treatments for dermatitis, allergic reactions, cellulitis
- Minimize exposure to water by taking less frequent, shorter durations showers
- Use cooler water if can control temperature
- Step in and out of the stream
- Use mild soap (anti-bacterial soaps, Ivory can make condition worse)
- Send clothes/sheets to the laundry – do not wash in sink/toilet- to decrease level of bacterial colonization particularly if MRSA is a concern
- Patients resist sending linens, clothes to laundry as they are often washed with other's laundry and/or come back "dingy"

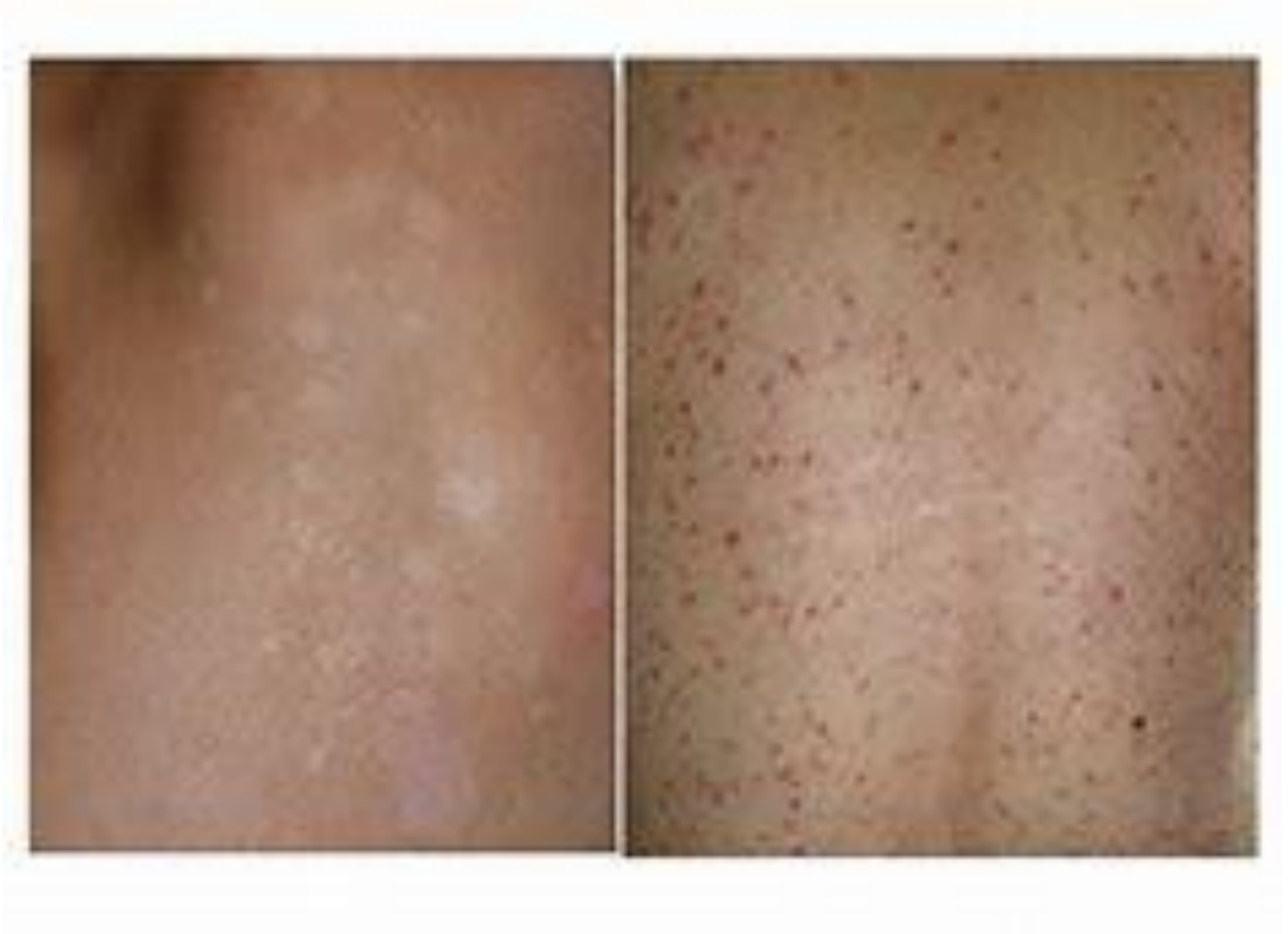
24-YO MALE WITH ANOTHER SKIN RASH

- Pseudofolliculitis resolved
- Now it is summer and he's been working out in the yard
- Skin has tanned but there are patches of paler skin that didn't tan
- Did not notice until someone said something to him
- Started on back but now appears to be spreading
- Not itchy, appearance is the most bothersome factor to him

Review of Systems/Physical Exam/Differential

- No other symptoms
- PE unremarkable except for skin
- Skin exam finds hypopigmented plaques, mostly oval but some clustering into larger plaques, not raised, no scale, no lichenifcation
- Lesions are discrete, well-demarcated borders, scattered over the back, chest, shoulders in a random pattern

- Differential Diagnosis
  - Pityriasis Rosea
  - Tinea Corporis
  - Tinea Versicolor



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Tinea Versicolor

- Skin infection by the fungus Malassezia furfur
- Looks like "spaghetti and meatballs" under the microscope if you do a scraping
- Usually a common skin inhabitant but can proliferate with change in skin pH, weather – often seen in summer due to tanning of unaffected skin
- Successful eradication requires leaving on selenium sulfide 2% preparation on for 30 min or longer 3 x a week x 4 weeks
- Dry towels between showers, fungal elements live in damp fibers

Unluckiest 24-year-old with shoulder pain

- 24-year-old male with PMH of rhabdo, atypical chest pain, MRSA, and tinea versicolor, presents with bilateral shoulder pain, right worse than left, progressively getting worse over the past 3 months
- Worse with pushing against something like a heavy door but pretty much constant at this point
- Rest seems to make it better but seems to never fully go away
- States he feels clicking in his shoulders when he rotates them
- Denies trauma, hx of dislocation, hx of shoulder surgery

PHYSICAL EXAM

- Vital signs similar to previous, no fever
- Inspection with shirt off shows no asymmetry of the shoulders as the alignment is good and the muscle tone is same with no atrophy seen
- Palpation of the shoulder finds no pain along the clavicle but tender ACJT, tender long head of the biceps
- No pain to palpation of the subacromial space or the rotator cuff
- Drop test/Beer can test negative
- Full ROM but pain mostly with adduction, mild pain in all other movements

Differential Diagnosis

- Less likely infectious as no fever, no skin changes, joint is not warm
- More likely musculoskeletal as it is reproducible with palpation
- Unlikely rotator cuff tear as pain not located around the RTC muscles or insertions
- Unlikely impingement or subacromial bursitis as pain not located there either

- Diagnosis: ACJT arthritis with long head of biceps tendonitis

Weightlifter's Shoulder

- ACJT is a fixed joint with very little movement
- Repeated stress can cause loosening of the tough fibrous capsule
- Movement of the distal clavicle against the acromion can cause arthritis
- Subluxation or separation can occur if fibrous tissue is weakened enough
- Uncommon in non-incarcerated populations
- "Dips", bench-pressing with excessive weight, "flies" past parallel usually the cause

TREATMENT

- If damage is not too extensive, rest and avoidance of the aggravating activity can improve symptoms
- If damage is extensive, may need cortisone injection or clavicular shaving to improve pain so patient can perform ADLs in relative comfort
- Patient must abstain from improper lifting and "dips" permanently, regardless if surgical intervention is performed
- Repetitive aggravating activities will cause more damage to the joint and all measures to treat will fail
- Long head of the biceps is a common co-occurring injury that improves with rest and avoidance of aggravating activity

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