Urgent Care – Case Reports

Scott Allan MD
Case #1

21 year old male presents with a chief complaint of a large, painful, erythematous bump on his leg. He had been bitten by a spider several days earlier. Since then, the lesion has been growing in size and is becoming increasingly painful. He denies any purulent drainage. He also denies any similar events in the past. Review of systems is otherwise negative.
Case #1 – 21 year old male

Physical Exam –

- Vital signs stable.
- 2 cm x 3 cm fluctuant, erythematous mass on his medial left thigh. Unable to express any drainage. Very tender to palpation. No other significant physical exam findings.
Case #1: Abscess Management

1. Incision and drainage remains the standard of care.
   - Is there a type of incision that is most effective?
   - Are there options other than incision and drainage?
   - Needle aspiration using ultrasound guidance?

2. Following incision and drainage, there are widely varying recommendations
   - Should we use packing?
   - Should we prescribe antibiotics?
   - Is primary closure an option?
Case #1 – Abscess Management

3 Incision vs Needle aspiration

- A randomized controlled trial of incision and drainage versus ultrasonographically guided needle aspiration for skin abscesses and the effect of MRSA.
- 101 patients.
  3 Success rate
    - Needle aspiration 26% (CI 18%-44%)
    - Incision and drainage 80% (CI 66%-89%)
    - Overall success rate of both modalities worsened by MRSA

3 Conclusion – Ultrasound guided needle aspiration is insufficient therapy for skin abscesses.
Case #1 – Abscess Management

3 Following incision and drainage, should we use packing?

3 Pediatric Emergency Care, 2012.

3 Randomized trial comparing wound packing to no wound packing following incision and drainage of superficial skin abscesses in the pediatric emergency department.

- Looked at 57 subjects over 15 month period.

3 Failure of therapy defined as requiring further intervention at 48 hours (repeat I&D, change in antibiotics)

3 Overall failure rates similar:

- 19 of 27 patients in the packed group (70%)
- 13 of 22 patients in the non-packed group (59%)

3 Limitations:

- Small sample size
- Overall failure rate seems very high
Case #1 – Abscess Management

3 Should we use packing II
3 Academic Emergency Medicine, 2009.
3 Routine packing of simple cutaneous abscesses in painful and probably unnecessary.
   ▪ Limited to simple cutaneous abscesses (<5cm)
   ▪ 48 subjects included in the final analysis
     3 Requiring further intervention after 48 hours
       ▪ 4 of 23 in the packed group
       ▪ 5 of 25 in the non-packed
     3 No significant difference
   ▪ Limitations:
     3 Small sample size. Cannot generalize the results.
Case #1 Abscess Management

3 Traditionally, the incision is left open to heal by secondary closure. Is primary closure an option?

3 Academic Emergency Medicine, 2013.


- Simple cutaneous infections. Those with systemic signs and cellulitis greater than 5cm were excluded.
- 51 Adult patients
  - Overall failure rate at 7 days similar
    - 7 of 23 treated with primary closure (30.4%. CI 15.6-50.9)
    - 8 of 28 treated with secondary closure (28.6%. CI 15.2-47.1)
- Limitations:
  - Small sample size. Results not generalizable
Case #1 – Abscess Management

Following incision and drainage, should we prescribe antibiotics?


Randomized controlled trial of TMP-SMX for uncomplicated skin abscesses in patients at risk for community associated MRSA infection.

- 190 patients assessed for treatment failure after 7 days.
  - Failure rates:
    - 15 out of 88 in patients receiving TMP-SMX (17%)
    - 27 out of 102 in patients receiving placebo (26%)
    - Confidence interval (-2% to 21%)

However, fewer lesions were noted after 30 days from the antibiotic group versus the placebo group

- Limitations – only studied healthy adults
Case #1 – Abscess Management

1. Should we prescribe antibiotics II


3. Randomized, controlled trial of antibiotics in the management of community-acquired skin abscesses in the pediatric patient

   - Pediatric patients randomized to receive 10 days of TMP-SMX or placebo following incision and drainage
   - 149 children in the study

   4. Failure rates:
      - 3 out of 73 in the antibiotic group (4.1%)
      - 4 out of 76 in the placebo group (5.3%)
Case #1 – Abscess Management

3 Western Journal of Emergency Medicine, 2013.
3 The treatment of cutaneous abscesses: comparison of emergency medicine providers practice patterns.
3 Data obtained via survey. 474 surveys sent, 350 returned.
  - 189 attending physicians
  - 135 residents
  - 26 midlevel providers
Case #1 – Abscess Management

3 Study results
3 Irrigation –
   - 48% did, 52% did not
   - Of those that did irrigate, almost all (94%) used saline
     - Some used tap water
     - 1% used betadine
   - Most irrigated under high pressure (66%)
   - No agreement on the amount of irrigation
3 Incision type –
   - Linear – by far most common
   - Elliptical and Cruciate used much less frequently
3 Packing –
   - Most used packing (91%)
     - 75% filled the wound cavity
     - 24% used a small wick to keep the cavity open
Case #1 – Abscess Management

3 Instructions –
   - Follow up in 24 hours – 15%
   - Follow up in 48 hours – 32%
   - Follow up at 48 hours unless wound is concerning and needs further evaluation – 47%

3 Culture –
   - Most did not – 68%

3 Antibiotics –
   - Rare after incision and drainage in healthy patients (only 17%)
   - Diabetic or immune-compromised (58%)
   - History of MRSA (24%)
   - Surrounding cellulitis (74%)
   - 33% used TMP-SMX
   - 8% used cephalexin
   - 8% used clindamycin
   - 47% used a combination of two or more drugs for strep and MRSA coverage

3 99% did not close incision with primary closure
# Case 1 – Abscess Management

## Table 1.

Current procedural guidelines for incision and drainage of simple cutaneous abscesses.

<table>
<thead>
<tr>
<th>Source</th>
<th>Pain management</th>
<th>I &amp; D with cavity probing</th>
<th>Irrigation</th>
<th>Packing</th>
<th>Culture</th>
<th>Antibiotics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roberts &amp; Hedges</td>
<td>Local infiltration and systemic</td>
<td>Yes</td>
<td>Mentions, but states no evidence exists for benefit</td>
<td>Gentle packing</td>
<td>Not discussed</td>
<td>Not discussed</td>
</tr>
<tr>
<td>Rosen’s Emergency Medicine</td>
<td>Local infiltration and systemic</td>
<td>Yes</td>
<td>Yes, no endpoint recommended</td>
<td>Gentle packing</td>
<td>Not recommended</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Tintinalli’s Textbook of Emergency Medicine</td>
<td>Local infiltration, systemic, and mentions regional/field block</td>
<td>Yes</td>
<td>Yes, no endpoint recommended</td>
<td>Gentle packing</td>
<td>Not discussed</td>
<td>Advocates clinical judgment, generally not needed</td>
</tr>
<tr>
<td>Rakel Textbook of Family Medicine</td>
<td>Advocates local with field block/regional block, lack of effectiveness of local anesthesia mentioned</td>
<td>Yes</td>
<td>Yes, no endpoint recommended</td>
<td>Gentle packing</td>
<td>Routine culture in immunocompetent patients not recommended</td>
<td>Not recommended</td>
</tr>
<tr>
<td>UpToDate</td>
<td>Local infiltration and drain</td>
<td>Yes</td>
<td>Yes, until all visible pus removed</td>
<td>Gentle packing for larger abscesses</td>
<td>Yes, for those receiving antibiotics</td>
<td>Discussed in separate article</td>
</tr>
<tr>
<td>NEJM</td>
<td>Local, mentions field/regional and systemic for comfort</td>
<td>Yes</td>
<td>Yes, until effluent is clear</td>
<td>Gentle packing</td>
<td>Optional</td>
<td>Based on community pathogens, generally not recommended</td>
</tr>
<tr>
<td>2011 IDSA Guidelines</td>
<td>Not discussed</td>
<td>Yes</td>
<td>Not discussed</td>
<td>Not discussed</td>
<td>Useful in certain circumstances</td>
<td>Recommended under certain circumstances</td>
</tr>
</tbody>
</table>

*Patients treated with antibiotic therapy, patients with severe local infection or signs of systemic illness, and patients who have not responded adequately to initial treatment, or concern for a cluster or outbreak.

Severe or extensive disease, rapid progression in presence of associated signs and symptoms of systemic illness—associated comorbidities or immunosuppression extremes of age, abscess in an area difficult to drain (e.g., face, hand, and genitalia), associated septic phlebitis, or lack of response to incision and drainage alone.
Abscess Management References


Case 2 – 39 year old male

3 Chief Complaint – red, swollen, painful area at the base of his big toe. Started last night and is getting worse. Has taken tylenol with minimal relief. Denies prior episodes.

3 Review of systems otherwise negative.

3 PMHx – Hypertension, Obesity, Alcohol Abuse, Cocaine abuse

3 Medications - Hydrochlorothiazide
Case 2 – 39 year old male

Physical exam –

- Vital Signs:
  - T: 98.6, P:102, R:16, BP: 138/82, P:10/10 SpO2: 98% on RA
- Erythematous, swollen first MTP joint on left foot.
- PE Otherwise unremarkable.
Case 2 – 39 year old male

3 Labs– CBC, BMP, ESR, Uric Acid level

3 Results:

- ESR – 25
- Uric Acid Level – 6.11mg/dL
- No other outstanding lab abnormalities.
Case 2 – 39 year old male

- Gold standard – joint aspiration
  - Rarely done

- Clinical diagnosis made of gout

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Table 4. Clinical Scores of the Final Diagnostic Rule After Transforming the Regression Coefficients Shrunken by the Bootstrap Method

<table>
<thead>
<tr>
<th>Predefined Variable</th>
<th>Regression Coefficient After Shrinkage</th>
<th>Clinical Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male sex</td>
<td>1.01</td>
<td>2.0</td>
</tr>
<tr>
<td>Previous patient-reported arthritis attack</td>
<td>0.95</td>
<td>2.0</td>
</tr>
<tr>
<td>Onset within 1 d</td>
<td>0.03</td>
<td>0.5</td>
</tr>
<tr>
<td>Joint redness</td>
<td>0.40</td>
<td>1.0</td>
</tr>
<tr>
<td>MTP1 involvement</td>
<td>1.25</td>
<td>2.5</td>
</tr>
<tr>
<td>Hypertension or ≥1 cardiovascular diseases</td>
<td>0.72</td>
<td>1.5</td>
</tr>
<tr>
<td>Serum uric acid level &gt;5.88 mg/dL</td>
<td>1.85</td>
<td>3.5</td>
</tr>
<tr>
<td>Maximum score</td>
<td>6.21</td>
<td>13.0</td>
</tr>
</tbody>
</table>

Clinical score total

0-4 : low probability – consider alternate diagnosis
- rheumatoid arthritis, pseudogout, psoriatic arthritis, reactive arthritis
(2 of 72 patients with gout)

>4 – 8 : intermediate – consider analysis of synovial fluid for MSU crystals
(17 of 63 patients with gout)

>8 : high probability (gout was confirmed in >80% of patients)
(197 of 245 patients with gout)

Case 2 – Acute Gouty Arthritis

3 Treatment should be initiated within 24 hours of onset
   - Symptoms will resolve on their own in 7-10 days

3 Do not start urate lowering therapy during an acute attack

3 Do not discontinue urate lowering therapy during acute attack
Management of an Acute Gout Attack

General Principles:
- Acute gouty arthritis attacks should be treated with pharmacologic therapy.
- To provide optimal care, pharmacologic treatment should be initiated within 24 hours of acute gout attack onset.
- Ongoing pharmacologic ULT should not be interrupted during an acute gout attack.

Assess severity
- Mild-Moderate Pain, Particularly For an Attack Affecting Only 1 or a Few Small Joints, or 1-2 Large Joints
- Severe Pain, Particularly For a Polyarticular Attack or an Attack Affecting Multiple Large Joints

Option: Initial combination therapy See Table 1

Monotherapy A

NSAID A (or COX-2 inhibitor)
- Supplement with Topical Ice as needed

Systemic Corticosteroids A

Table 1. Task force panel (TFP) recommendations for combination therapy approach to acute gouty arthritis

Initial combination therapy is an appropriate option for an acute, severe gout attack, particularly with involvement of multiple large joints or polyarticular arthritis (evidence C).

Acceptable combination therapy approaches include the initial simultaneous use of full doses (or, where appropriate, prophylaxis doses) of either: 1) colchicine and nonsteroidal antiinflammatory drugs (NSAIDs), 2) oral corticosteroids and colchicine, or 3) intra-articular steroids with all other modalities (evidence C).

For patients not responding adequately to initial pharmacologic monotherapy, adding a second appropriate agent is an acceptable option (evidence C).

The TFP was not asked to vote on use of NSAIDs and systemic corticosteroids in combination, given core expert panel concerns about synergistic gastrointestinal tract toxicity.

# Evidence Grades for Recommendations:
Level A: Supported by multiple (ie, more than one) randomized clinical trials
Level B: Derived from a single randomized trial, or nonrandomized studies.
Level C: Consensus opinion of experts, case studies, or standard-of-care.

* Assumes that the initial diagnosis of acute gout was correct, and that the lack of adequate response of acute gout was to an appropriate first-line therapy option.
Acute gouty arthritis – NSAIDS and COX-2 inhibitors

- Indomethacin (evidence A), Naproxen (evidence A)
  - Indomethacin – 50mg, PO, q8hr for 3-5 days
  - Naproxen – 750mg initially, then 250mg, q8hr until attack subsides
    - Extended release – 1000-1500mg once, then 1000mg daily until attack subsides
- Celecoxib – option for acute gout in patients with a contraindication or intolerance to other NSAIDs (evidence B)
  - Recommended dosing – 800mg once, 400mg on day 1, 400mg BID x 1 week
Acute gouty arthritis – Colchicine

Only recommended when initiated within 36 hours of onset (evidence C)

- Loading dose 1.2mg followed by 0.6mg one hour later
- Continue with 0.6mg Qdaily or BID until attack resolves
- Requires dosing reduction with moderate to severe kidney disease
- High incidence of GI side effects before relief of symptoms
Acute gouty arthritis

Corticosteroids

1. Intra-articular – Consider if 1-2 large joints affected
   - Dose dependant upon joint size

2. Systemic – an option for all cases of gout
     - 120 Patients
       - 35mg prednisolone Qdaily vs 500mg naproxen BID
       - Treatment for 5 days
     - Both equally effective, no difference in treatment.
   - Prednisone 0.5mg/kg per day
     - For 5-10 days and then stop (A) –or–
     - For 2-5 days with a 7-10 day taper and then stop (C)
Acute gouty arthritis – intra-articular corticosteroids

Cochrane review 2013

Started with 182 records identified through database searching
32 records excluded as duplicates - 150 records remain
148 records excluded
  ▪ Incorrect study type: 101
  ▪ Wrong population: 28
  ▪ Wrong intervention: 19
2 full text articles remain
Both remaining articles excluded as neither were RCT/CCT
Result – No published RCTs or CCTs that the efficacy and safety of intra-articular glucocorticoid therapy versus placebo in people with acute gout
Acute gouty arthritis – Off label therapies in development

3 Biologic IL-1 inhibitors

- IL-1β – recognized as key cytokine driving the inflammation of acute gouty arthritis
- Canakinumab, rilonacept, anakinra
  3 Anakinra currently used for rheumatoid arthritis
    - Expensive – but significantly less expensive than the others
- None currently FDA approved for use in gout
- Lack of long term safety data and expense
  3 These should only be considered in patients with refractory gout who have failed standard therapies
Acute Gouty Arthritis References


DrHein JEM Janssens MD, Matthijs Janssen PhD, Eloy H van de Lisdonk PhD, Prof Piet LCM van Riel PhD, Prof Chris van Weel PhD. Use of oral prednisolone or naproxen for the treatment of gout arthritis: a double-blind, randomised equivalence trial. The Lancet, Volume 371, Issue 9627, Pages 1854 - 1860, 31 May 2008. doi:10.1016/S0140-6736(08)60799-0