Evaluating Concordance Between Clinical and Pathologic Diagnosis in Pediatric Appendicitis

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Disclosure Information

I have no financial or contractual disclosures

Purpose

The presentation will explore incongruity in the clinical and pathologic definition of appendicitis, and how this can affect outcome studies and implementation of best practice techniques.
Objectives

**Treatment Failure**
- List methods which can aid guide therapy and improve clinical outcomes:
  - Development and agreement on the clinical and pathological definition of appendicitis
  - Development and adherence to a treatment path for appendicitis

**Categorizing Appendicitis**
- Outline 2 systems for categorizing appendicitis:
  - Traditional: Acute, Suppurative, Gangrenous, Perforated.
  - Newer: Acute (Acute & Suppurative), and Complex/Advanced (Gangrenous & Perforated)

**Coding and Reimbursement**
- List 2 methods to encourage coding/billing based on clinical diagnosis:
  - Development of an operative template which includes ICD-10 coding
  - Include ICD-10 coding in the hospital discharge summary

Clinical vs. Pathologic Diagnosis

**Clinical diagnosis:**
- Determined by the surgeons based on intra-operative findings.

**Pathologic diagnosis:**
- Obtained from the pathology record.

Categorization & Hospital Treatment

**Categorization of Appendicitis:**
1. Acute
2. Suppurative
3. Gangrenous
4. Perforated

**Treatment based on Category:**
1. No post-op antibx; DC W/I 12-24 hrs.
2. 2 Post-op antibx doses; DC W/I 24 hrs
3. 4 Post-op antibx doses; DC W/I 36-48 hrs.
4. 9 Post-op antibx doses; DC W/I 72 hrs.
Discharge Antibiotics

- **Acute**
  - None

- **Suppurative**
  - None

- **Gangrenous**
  - Cefdinir & Metronidazole or Ciprofloxacin & Metronidazole x 3 days

- **Perforated**
  - Cefdinir & Metronidazole or Ciprofloxacin & Metronidazole x 5 days

Criteria for Discharge

- Afebrile x 24 hrs.
- Diet tolerance
- Ability to ambulate
- Pain management
- Benign abdominal exam
- WBC < 15

Methods

- 1/1/2016-12/31/2016
- Retrospective review
- 417 patients
- Exclusion Criteria:
  - Treatment at OSH
  - Non-operative management
  - Confounding complex medical conditions
- Cohort studied: 384 patients
Findings

N=384:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute</td>
<td>136</td>
</tr>
<tr>
<td>Suppurative</td>
<td>39</td>
</tr>
<tr>
<td>Gangrenous</td>
<td>50</td>
</tr>
<tr>
<td>Perforated</td>
<td>159</td>
</tr>
</tbody>
</table>

Concordance Between Clinical and Pathologic Dx:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Concordance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute</td>
<td>52.94%</td>
</tr>
<tr>
<td>Suppurative</td>
<td>53.84%</td>
</tr>
<tr>
<td>Gangrenous</td>
<td>14%</td>
</tr>
<tr>
<td>Perforated</td>
<td>75.47%</td>
</tr>
<tr>
<td>Average</td>
<td>49% concordance</td>
</tr>
</tbody>
</table>

Findings: Intra-Abdominal Abscesses (IAA)

16 patients returned with IAA

- 15 (93.75%) +concordance (Perforated)
- 1 (6.25%) -concordance (+ clinical dx of perforated appendicitis, pathologic diagnosis of acute appendicitis)

3.9% incidence IAA within entire cohort of patients studied.

Conclusions I

- There is a significant discordance between the clinical and pathologic diagnosis.
- This finding does not appear to have relevance in clinical outcome.
- The low rate of IAA appears to confirm appropriacy of treatment.
Conclusions II

Future Studies:
- Comparison of admission and discharge inflammatory markers and rate of treatment failure.
- Adherence of antibiotic management to a current hospital antibiogram.
- Development of definitions of appendicitis to accurately assign a treatment pathway.
- Developing/adhering to a standardized pathologic diagnosis of appendicitis.

References


Thank You!