The Acute Abdomen: Assessment & Diagnosis

Alice A. Gervasini, PhD, RN
Nurse Director, Trauma & Emergency Surgical Services
Massachusetts General Hospital
Instructor in Surgery
Harvard Medical School
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Objectives

• Review assessment strategy for the acute abdomen

• Discuss management strategy for common sources of abdominal pain/the surgical abdomen in both the outpatient and inpatient environment.
What is serious and what is not?
Presenting Factors

• Pain
• Upper GI concerns
• Lower GI concerns
• Non-specific concerns
Visceral Pain

• Typically associated with Autonomic System
• Symptoms:
  • Pallor, sweating, N/V, changes in VS’s
  • Pain is often dull or aching
• Emotional reaction
  • Anxiety
  • No pain but complaints of ‘discomfort’
• Slow pain
• Organ specific
Visceral Pain

- Often vague
- Gradual onset
- Poor discrimination
- General versus specific complaints
- Usually lasts longer
- Associated with tissue damage:
  - Stretching/distention
  - Ischemia/chemo receptors
  - Cramping/mechanical or spasm of muscle
  - Chemical/enzyme release
• Progression of nerve signal through the autonomic bundle often results in referred pain
Referred Pain
Somatic Parietal Pain

- Fast pain
- Rapid onset
- Often described:
  - Excruciating
  - Sharp/severe
  - Peritonitis
- Signal is sent directly into local spinal nerves
Causes of Abdominal Pain

• Obstructive
• Inflammation
• Perforation
Obstructive Pain

- Visceral
- Gradual onset
- Growing over time
- Nausea and Vomiting
- SBO
- Renal Stone
- CBD Stone
- Usually Urgent, not Emergent
- Mechanical in nature
Inflammation

- Visceral early, may be come somatic
- Vague
- Increasing intensity
- Early appendicitis
- Gastritis
- PUD (non-perforated)
- Colitis
- Ischemia without infarction
- Usually an urgent, not emergent problem
Perforation

- Somatic-Parietal Pain
- Peritoneal
- Sudden onset
- Usually an Emergency
Free air under the diaphragm
Clinical Evaluation

- Comprehensive exam
  - Evaluate the chief complaint in detail
  - Co morbid conditions
  - 10 essential components

- Focused exam
  - Performed to assess the effectiveness of tx’s
  - ID complications
  - Illicit changing signs & symptoms
Clinical Evaluation

- History:
  - Dimensions of pain
    - Onset, duration, frequency, character, location, radiation, intensity
  - Presence or absence of any aggravating or alleviating factors & associated symptoms

- Obtaining a good history is often the most critical component in the diagnostic process for acute abdominal pain
Clinical Evaluation-continued

- Physical Exam
  - Organized and methodical approach

- General appearance
  - Do they look sick?
  - Do they appear to be in distress?

- The patient should be resting in a ‘comfortable’ supine position
Clinical Evaluation-continued

- **Inspection**
  - Always look before you touch
    - Make note of – surgical scars, hernia, distention, obvious masses, ecchymosis, visible pulsations or peristalsis

- **Auscultation**
  - Bowel sounds
  - Bruits

- **Percussion**
  - Tympani

- **Palpation** – most helpful!
Clinical Evaluation-continued

• Palpation:
  • Useful to determine the extent & severity of the patients tenderness/pain
    • Diffuse – generalized peritoneal inflammation
    • Mild diffuse without guarding – inflammatory intestinal process without peritoneal inflammation (gastroenteritis)
    • Localized tenderness – early stage of a process

• Additional exam:
  • Perineal exam
  • Vaginal exam
Flaws in Assessments

- Lack of clear definitions of terms:
  - Mild/moderate/severe
  - Guarding
  - Diffuse
  - ‘peritoneal signs’
Abdominal Pain

• Characteristics: Can you describe the pain (sharp, dull, superficial, or deep)? Is the pain intermittent or continuous? Was the onset sudden or gradual? Can you point to where the pain is located? What makes the pain better, worse?

• Associated factors: Are there other symptoms associated with the pain—fever, nausea, vomiting, diarrhea, constipation, anorexia, weight loss, dyspepsia?

• History: Any family history of GI cancer, ulcer disease, inflammatory bowel disease? Any previous history of tumors, malignancy, or ulcers?
Index of Suspicion

• Learned patterns

• Known entities

• Experiential advantage

• *If you don’t have this – you need to develop this – and you develop this through shared learning, clinical/skill level expertise and a genuine curiosity factor!*
Clinical Reasoning

• Process of collecting data

• Coming to some conclusions

• What is wrong with the patient?
• At this point, it is much easier to be Acute Care versus Primary Care!
What to do next?

• If your index of suspicion is low:
  • No fever
  • Diffuse pain
  • No progression over a couple of days
  • Associated N/V diarrhea
  • No confounding variables that puts the patient at risk
  • Reliable patient

• Send patient out with clear instructions
What about this....

- Diffuse abdominal pain
- Gradual to sudden onset
- Mild anorexia
- One episode of diarrhea
- Low grade fever
- Possibly localizing

- PE
  - Vaginal & rectal
- Lab work
  - WBC
  - H/H
  - U/A
  - Pregnancy test
- Other studies?
  - Spiral CT has a sensitivity of 90-100%, a specificity of 91-99%, a positive predictive value of 95-97%, and an accuracy of 94-100%.
  - US
  - Plain film of the abdomen
- Differential Dx’s
What about this....

- Epigastric pain
- Often excruciating
- Post prandial

- PE – including rectal
- Lab work
  - WBC
  - U/A
  - Liver Enzymes
- Other studies?
  - U/S
  - CT
- Differential Dx’s
Cholecystitis

- ↑ WBC
- ↑ Temp
- Referred Pain
- N/V
- ↑ Liver enzymes
- Positive Murphy’s Sign
• No fever
• Normal liver function
• Normal WBC
• Referred Pain
• Negative Murphy's Sign
• Biliary Colic
Gall Stones in the Common Bile Duct

- No fever
- ~WBC
- ↑ Serum Bilirubins
- ↑ Liver enzymes
- ? Jaundice
- Cholelithiasis
- Role of ERCP
What about this....

- Gradual onset LLQ pain
- Decreasing appetite
- Fever
- Altered bowel habit
- Bloating

- PE- rectal exam
- Labs
  - WBC
  - U/A
- Other Studies
  - CT
  - U/S
  - Plain Film
- Differential Dx’s
What do you think?
Diverticulitis with Abscess
Ileus

• Inhibition of the intestinal muscle function
  • Diminished or absent motility

• This can be representative of a post operative problem or a symptom of an inflammatory process, or in response to partial or complete obstruction
Ileus

• **Diagnostic work up**
  - Chest/abdominal x-ray (flat & upright)
  - ?WBC – if patient ‘sick’ with this; febrile, tachycardic

• **With persistent ileus**
  - Abdominal CT is often necessary to assess for:
    - Obstruction
    - Collections
Gall Stone Ileus
Bowel Obstruction

- Most common surgical emergencies
- ¾ of events occur in the small bowel
- Mechanical blockage
  - Partial or complete
  - Results from intra-luminal obstruction
    - Tumor
    - Gall stone
  - Results from extra-luminal obstruction
    - Adhesions
    - Tumor
Bowel Obstruction

• Diagnostic work up
  • Labs
  • Abd flat plate and upright
  • CT
  • Colonoscopy
Gas Pattern Consistent with SBO
Non-specific gas pattern
Abscess/Collection
What about this?

- Acute Pancreatitis with normal lipase.
- Excrutiating pain
- Epigastric region
- Referred pain to the back
- Degree of sickness varies
- Recovery can be prolonged
- Cause - varies
• Gall Stone Pancreatitis
• Acute Pancreatitis
What about special populations?
Management strategies

• Index of suspicion

• Awareness of diagnostic test results

• Integration of test results

• Awareness of clinicians concerns

• Consistency with reassessment
Summary

• Excellent skills with:
  • H & P
  • Establishing a clear picture / timeline of S & S
  • Linking differential dx’s with diagnostic work-up
• Index of suspicion