Using an Abdominal Simulator to Assess Abdominal Diagnostic Accuracy

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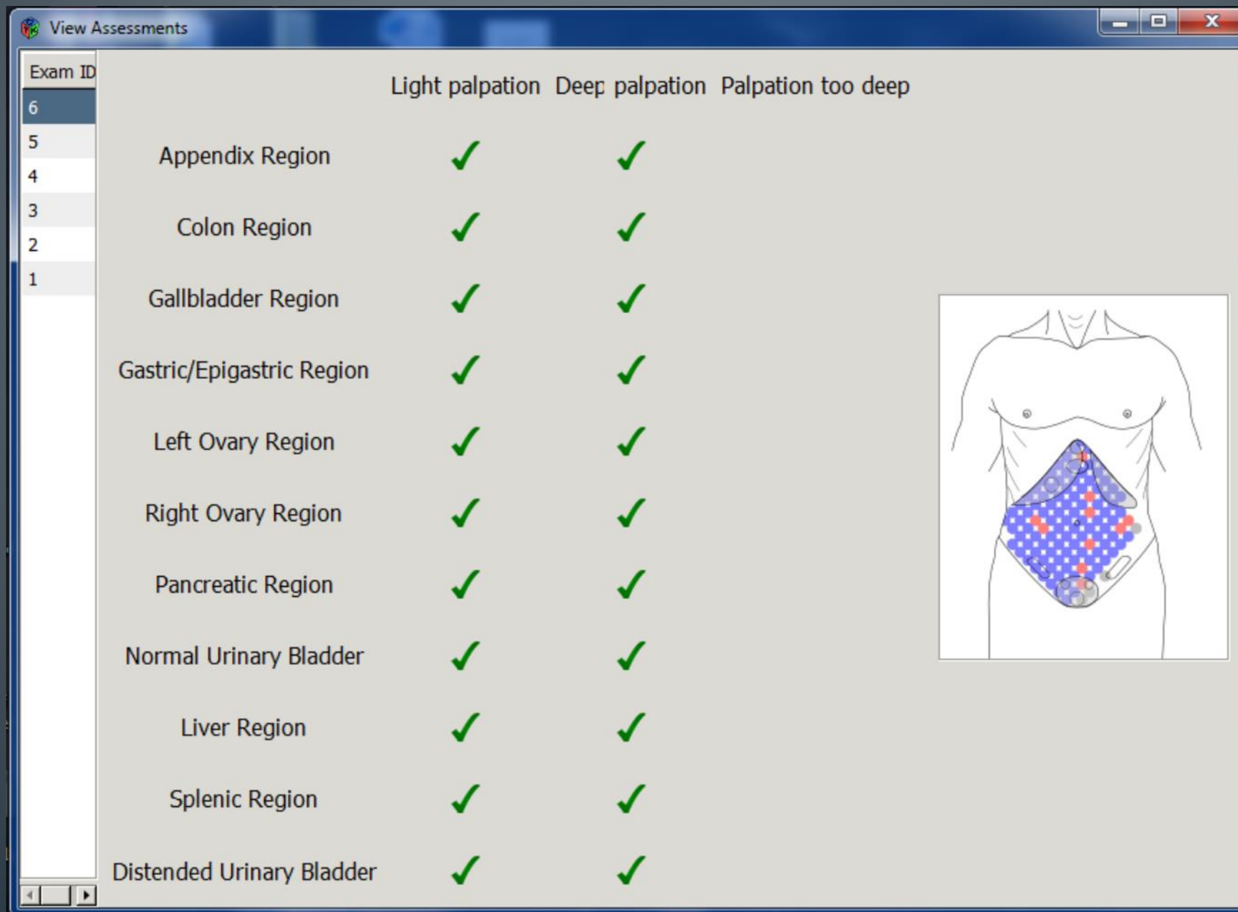
A Quick Recap

- What is the AbSim?
- What are we doing with the AbSim
- Where were we when the Summer began?
- Where are we now?
- Why is this important?

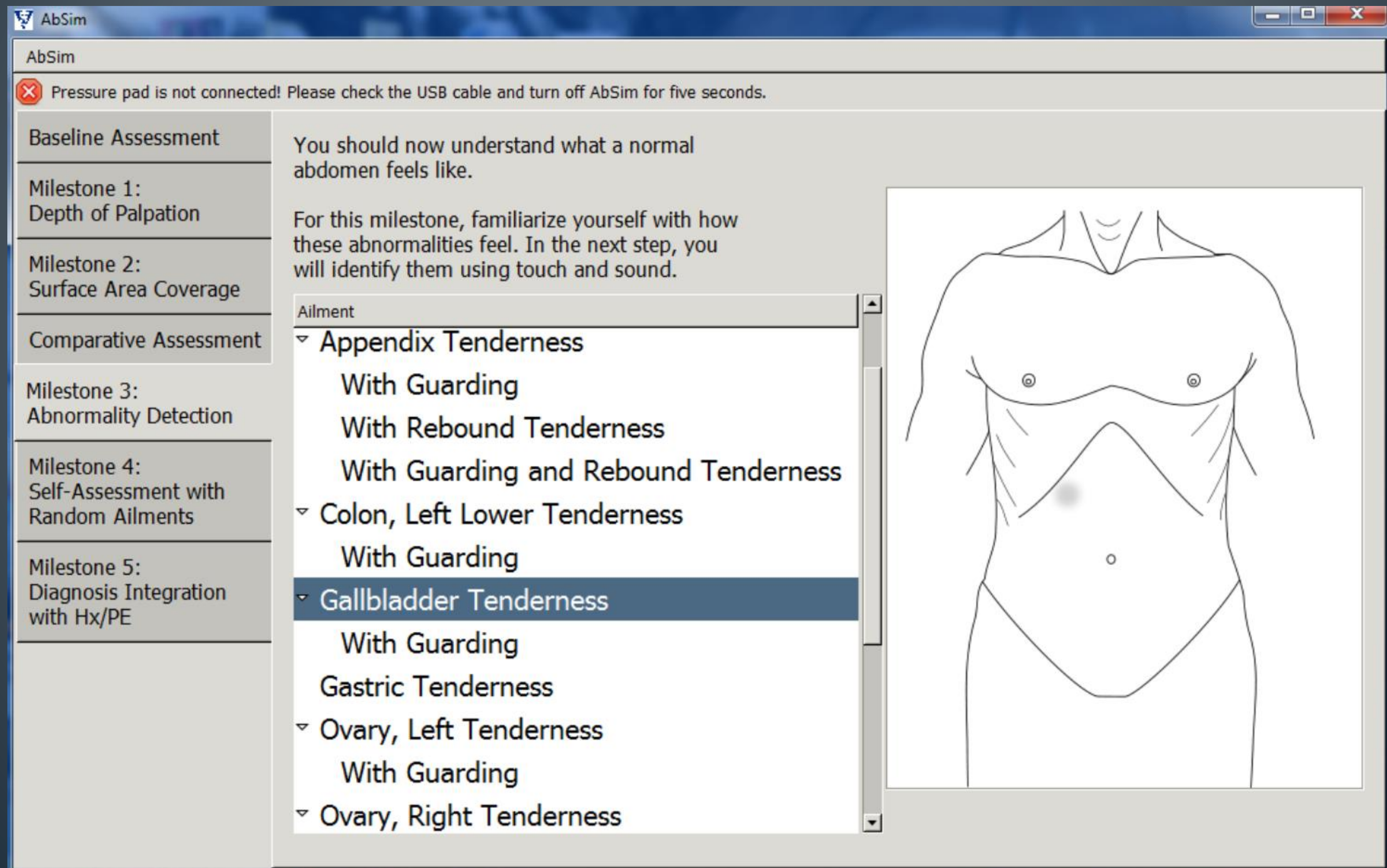
The Components of the Study

- Palpatory coverage of the abdomen



The Components of the Study

- Identification of abdominal abnormalities



The Components of the Study

- Case integration and Diagnosis

AbSim

AbSim

Pressure pad is not connected! Please check the USB cable and turn off AbSim for five seconds.

Baseline Assessment

Milestone 1:
Depth of Palpation

Milestone 2:
Surface Area Coverage

Comparative Assessment

Milestone 3:
Abnormality Detection

Milestone 4:
Self-Assessment with Random Ailments

Milestone 5:
Diagnosis Integration with Hx/PE

HISTORY: A 67 year old female presents for an evaluation of abdominal pain. She describes the pain as gradual in onset, moderate to severe, constant, progressive worsening over time, and ongoing for approximately 8 hours prior to presentation. The location is described as right lower quadrant. She describes the following associated findings: anorexia, and feeling feverish. The patient's past medical history is unremarkable.

PHYSICAL EXAMINATION: The patient's General Appearance reveals a patient who wants to remain very still. VITAL SIGNS are remarkable for the following: temperature 38.6° C. THORAX and LUNGS are unremarkable. ABDOMINAL EXAM/INSPECTION is unremarkable. ABDOMINAL AUSCULTATION reveals: decreased bowel sounds.

Upper Gastrointestinal Etiology

Choledocolithiasis

Pancreatitis

Cholecystitis

Mesenteric Infarction

Small Bowel Obstruction

Appendicitis

Diverticulitis

Acute Enteritis

The Evolution of an Abdominal Case

- Why do we need different cases?
- Selecting new cases
- The fine line between easy and hard
  - Cases that REQUIRE palpation to make a diagnosis
  - Cases that use a patient history to solidify physical findings
  - Cases that can be controlled by milestone 3
- How do we determine the difficulty of these cases?
  - Getting feedback on the cases

A Case for Your Consideration

- HISTORY: A 27 year old female presents for an evaluation of abdominal pain. She describes the pain as gradual in onset, moderate to severe, constant, progressive worsening over time, and ongoing for approximately 6 hours prior to presentation. The location is described as peri-umbilical. She describes the following associated findings: nausea and vomiting, anorexia, and feeling feverish. The patient's past medical history is unremarkable.
- PHYSICAL EXAMINATION: General Appearance is grossly unremarkable. VITAL SIGNS are remarkable for the following: temperature 37.5 °C. THORAX and LUNGS are unremarkable. ABDOMINAL EXAM/INSPECTION is unremarkable. ABDOMINAL AUSCULTATION reveals: decreased bowel sounds.

The Palpatory Findings

- ABDOMINAL PALPATION reveals: tenderness in the right lower quadrant, no abdominal guarding, and pushback in the right lower quadrant.
- Diagnosis?
- How difficult was this case?

Another Case for Your Consideration

- HISTORY: A 67 year old female presents for an evaluation of abdominal pain. She describes the pain as gradual in onset, mild in nature, constant, progressive worsening over time, and ongoing for less than 5 hours prior to presentation. The location is described as non-specific, and worsening with defecation. She describes the following associated findings: anorexia, and feeling feverish. The patient's past medical history is positive for the following: alcohol abuse.
- PHYSICAL EXAMINATION: General Appearance is grossly unremarkable. VITAL SIGNS are remarkable for the following: temperature 37.2 °C. THORAX and LUNGS are unremarkable. ABDOMINAL EXAM/INSPECTION is unremarkable. ABDOMINAL AUSCULTATION reveals: decreased bowel sounds.

Yet More Palpatory Findings

- ABDOMINAL PALPATION reveals: tenderness in the left lower quadrant, and no abdominal guarding.
- Diagnosis?
- How difficult was this case?

The Answer Booklet

Before palpating the abdomen	After palpating the abdomen
____ A. Upper GI Etiology ____ B. Cholecystitis ____ C. Pancreatitis ____ D. Choledocolithiasis ____ E. Mesenteric Infarction ____ F. Small Bowel Obstruction ____ G. Acute Enteritis ____ H. Appendicitis ____ I. Diverticulitis ____ J. Ovarian Cyst ____ K. Ovarian Torsion ____ L. Constipation ____ M. Urinary Tract Infection	____ A. Upper GI Etiology ____ B. Cholecystitis ____ C. Pancreatitis ____ D. Choledocolithiasis ____ E. Mesenteric Infarction ____ F. Small Bowel Obstruction ____ G. Acute Enteritis ____ H. Appendicitis ____ I. Diverticulitis ____ J. Ovarian Cyst ____ K. Ovarian Torsion ____ L. Constipation ____ M. Urinary Tract Infection
Please rate your confidence in your above answers: Not at all confident Extremely confident 1 2 3 4 5	Please rate your confidence in your above answers: Not at all confident Extremely confident 1 2 3 4 5

Selection of Abnormalities for Detection

- Abdominal Abnormalities:
- 1. Appendix tenderness + Guarding
- 2. Left Lower colon
- 3. Gallbladder + Guarding
- 4. Gastric/Pancreatic
- 5. L/R Ovary
- 6. Urinary Bladder Tenderness/Enlargement
- 7. Hepatomegaly
- 8. Splenomegaly

Selection of Abnormalities for Detection

- Rationale:
  - Tenderness vs. organomegaly
    - The unique case of the urinary bladder
  - Determining a proper distribution
  - Pairing based on difficulty AND location
  - Proposed pairings:
  - A: Appendix/Gastric
  - B: Urinary Bladder/Hepatomegaly
  - C: Left Ovary/Splenomegaly
  - D: Gallbladder/Left Lower Colon

The Answer Booklet Returns

___ A. Hepatomegaly
___ B. Splenomegaly
___ C. Gastric Tenderness
___ D. Gallbladder Tenderness
___ E. Pancreatic Tenderness
___ F. Appendix Tenderness
___ G. Left Ovary Tenderness
___ H. Right Ovary Tenderness
___ I. Urinary Bladder Tenderness
___ J. Enlarged Urinary Bladder with Tenderness
___ K. Left Lower Colon Tenderness

Is guarding present?

No Maybe Yes

Is rebound tenderness present?

No Maybe Yes

Please rate your confidence in your above answers:

Not at all confident 1 2 3 4 5 Extremely confident

Conclusion

- Next Steps:
  - Finalize the cases
  - Complete the initial assessment of the first year PA class
    - Before early September
  - Complete the assessment with the second year PA class
  - Complete the follow-up assessment with the first year PA class following their lecture/clinical exposure to the abdomen (roughly September 8)

Questions?

- Your questions will be answered in the order received.
  - We are currently receiving a large volume of questions; we appreciate your patience and will attempt to assist you as soon as possible.