

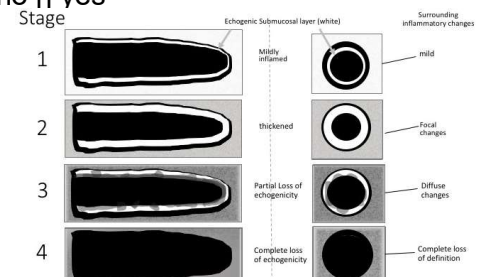
Site _____ Date (mm/dd/yy): _____ Please complete this data form for any patient in which you are able to obtain serial ultrasounds for appendicitis that are at least 4 hours apart.

I. Demographics:

- A. Patient age (years): _____
- B. Gender: ☐ male ☐ female
- C. Height (in): _____ D. Weight (kg): _____
- E. When did any symptoms first begin? Date (mm/dd/yy): _____ Time (24:00): _____
- F. When did the abdominal pain begin? Date (mm/dd/yy): _____ Time (24:00): _____
- G. How is the patient diagnosed with appendicitis? (check all that apply)
- ☐ history and physical exam
- ☐ ultrasound done by ☐ POCUS; ☐ RADUS; report states: _____
- ☐ CT; report states: _____
- Size of the appendix: _____
- Fecalith: ☐ present; ☐ absent
- Periappendiceal fluid: ☐ present; ☐ absent
- Phlegmon: ☐ present; ☐ absent
- Perforation: ☐ present; ☐ absent
- Diagnosis: _____
- ☐ MRI; report states: _____
- Size of the appendix: _____
- Fecalith: ☐ present; ☐ absent
- Periappendiceal fluid: ☐ present; ☐ absent
- Phlegmon: ☐ present; ☐ absent
- Perforation: ☐ present; ☐ absent
- Diagnosis: _____

II. Initial ultrasound:

- A. Date (mm/dd/yy): _____ start time of scan (24:00): _____ end time of scan (24:00): _____
- B. Which department performed the ultrasound (for this form): ☐ POCUS ☐ RADUS
- C. Operator: ☐ Resident ☐ PEM fellow ☐ Ultrasound fellow ☐ Attending _____
- D. Brand/model of ultrasound machine?
- E. Features:
1. Largest diameter of appendix (measured anterior to posterior with compression): _____ mm
 2. Maximal mural thickness (distance from hyperechoic luminal interface to outer hyperechoic border (submucosa): _____ mm
 3. Please estimate the degree of appendiceal enlargement: ☐ tip only ☐ diffusely enlarged
 4. Presence of fecalith: ☐ no ☐ yes
 5. Presence of surrounding free fluid? ☐ no ☐ yes (if yes: ☐ simple ☐ complex)
 6. Presence of surrounding inflammation? ☐ no ☐ yes (if yes, please select one: ☐ focal ☐ diffuse)
 7. Is there a focal ileus (absent peristalsis near the appendix)? ☐ no ☐ yes
 8. Describe the appearance of the normally echogenic submucosal (SM) layer (see figure):
☐ Stage I: Early- thin smooth SM layer
☐ Stage II: Suppurative - thick and smooth SM layer
☐ Stage III: Suppurative/Gangrenous – thick or thin irregular intermittent SM layer
☐ Stage IV: Gangrenous - loss of the SM layer
 9. Any gross perforation/ obvious wall defects seen? ☐ yes ☐ no



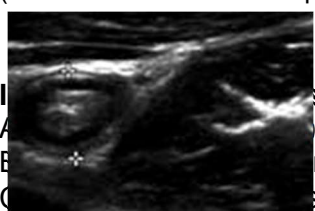
10. Mural color doppler signal seen? ☐ yes ☐ no
11. Peri-appendiceal Doppler signal seen? ☐ yes ☐ no
12. Any signs of phlegmon/abscess? ☐ no ☐ yes _____ size (if measured): _____
13. Location of appendix? ☐ lateral to psoas ☐ medial to psoas
☐ McBurneys point (MBP) ☐ inferior to MBP ☐ superior to MBP
☐ Other _____
14. Appendix tender under pressure with probe (sonographic tenderness)? ☐ no ☐ yes
15. Any other notable features of the appendix (e.g. kinked/sharp turns, etc.) _____

III. Interventions

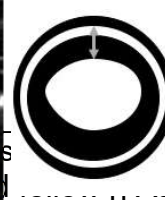
- A. Antibiotics given? ☐ no ☐ yes: _____ date (mm/dd/yy): _____ time (24:00): _____
- B. Narcotics given? ☐ no ☐ yes: _____ date (mm/dd/yy): _____ time (24:00): _____
- C. Initial WBC: _____

VISUAL GUIDES

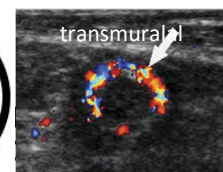
Largest diameter of appendix
(outer to outer wall w/compression)



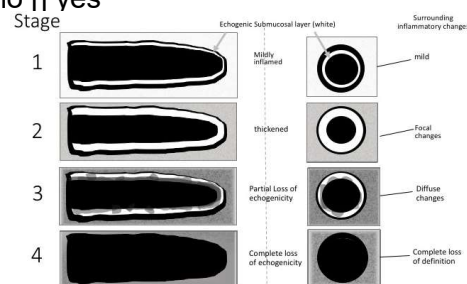
Maximal mural thickness
(echogenic border to lumen)



Color Doppler signal



- D. Brand/model of ultrasound machine? _____
- E. Features:
 1. Largest diameter of appendix (measured anterior to posterior with compression): _____ mm
 2. Maximal mural thickness (distance from hyperechoic luminal interface to outer hyperechoic border (submucosa): _____ mm
 3. Please estimate the degree of appendiceal enlargement: ☐ tip only ☐ diffusely enlarged
 16. Presence of fecalith: ☐ no ☐ yes
 17. Presence of surrounding free fluid? ☐ no ☐ yes (if yes: ☐ simple ☐ complex)
 18. Presence of surrounding inflammation? ☐ no ☐ yes
(if yes, please select one: ☐ focal ☐ diffuse)
 19. Is there a focal ileus (absent peristalsis near the appendix)? ☐ no ☐ yes
 20. Describe the appearance of the normally echogenic submucosal (SM) layer (see figure):
☐ Stage I: Early- thin smooth SM layer
☐ Stage II: Suppurative - thick and smooth SM layer
☐ Stage III: Suppurative/Gangrenous – thick or thin irregular intermittent SM layer
☐ Stage IV: Gangrenous - loss of the SM layer
 21. Any gross perforation/ obvious wall defects seen? ☐ yes ☐ no
 22. Mural color doppler signal seen? ☐ yes ☐ no
 23. Peri-appendiceal Doppler signal seen? ☐ yes ☐ no
 24. Any signs of phlegmon/abscess? ☐ no ☐ yes _____ size (if measured): _____
 25. Location of appendix? ☐ lateral to psoas ☐ medial to psoas
☐ McBurneys point (MBP) ☐ inferior to MBP ☐ superior to MBP
☐ Other _____
 26. Appendix tender under pressure with probe (sonographic tenderness)? ☐ no ☐ yes
 27. Any other notable features of the appendix (e.g. kinked/sharp turns, etc.) _____



Columbia University IRB
 IRB-AAAR7131 (Y03M00)
 IRB Approval Date: 11/22/2019
 For use until: 11/21/2020

III. Interventions

- A. Antibiotics given? ☐ no ☐ yes: _____ date (mm/dd/yy): _____ time (24:00): _____
- B. Narcotics given? ☐ no ☐ yes: _____ date (mm/dd/yy): _____ time (24:00): _____
- C. Surgery performed? ☐ no ☐ yes: _____ date (mm/dd/yy): _____ time (24:00): _____
- If surgery is performed, what are the findings?
- a. Appendicitis? ☐ no ☐ yes
- b. Perforation? ☐ no ☐ yes

FEASIBILITY:

I. Please rate how much you agree with the following statements for the ultrasound performed on the patient

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
a. "The Ultrasound was technically easy for me to perform"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. "The Ultrasound was well-tolerated by the patient"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. "The Ultrasound was well-accepted by the family"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

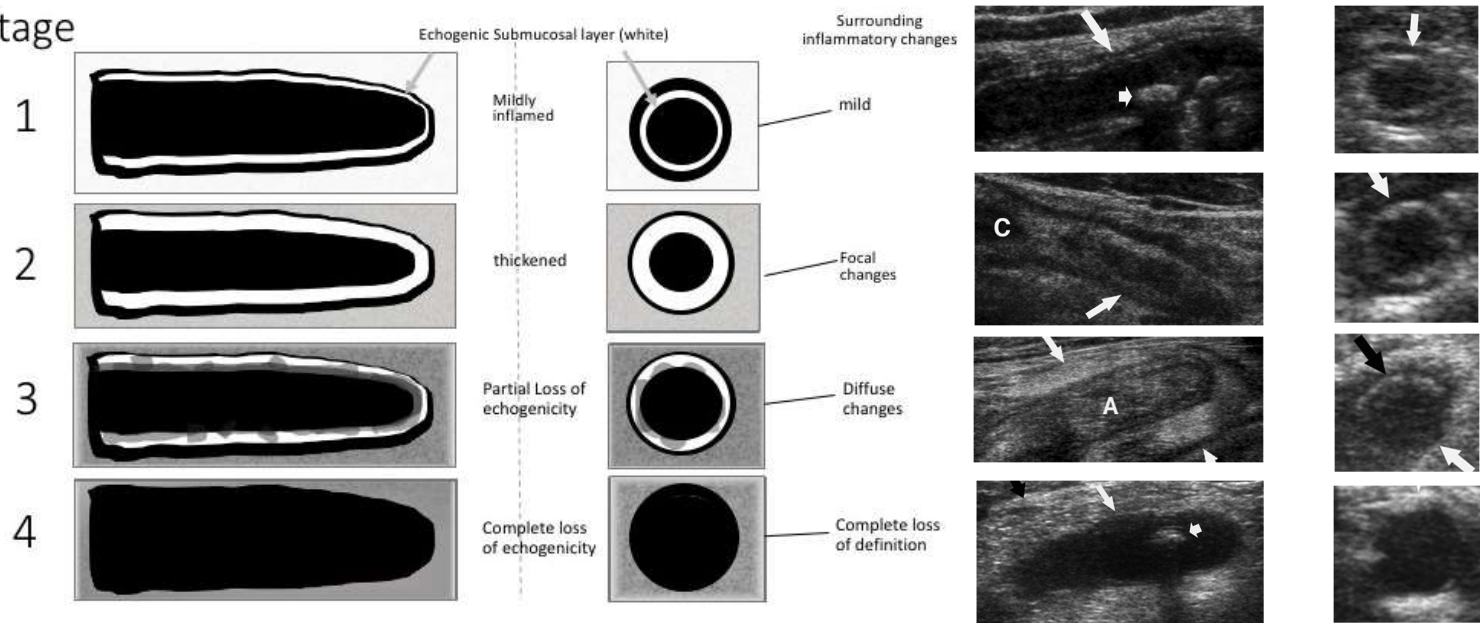
II. Were you able to obtain all of the views/measurements? ☐ yes ☐ NO (if no, please answer next question)

III. What barriers did you encounter today to efficiently obtaining optimal ultrasound views (select all that apply)?

- ☐ None
- ☐ Patient pain
- ☐ Patient changed location (e.g. admitted)
- ☐ ER too busy
- ☐ Other; Please describe:



Stage



Example of SM echogenic layer preserved until tip has focal loss = Necrotic tip /gross perforation

