Ultrasound of:
- Appendicitis
- Intussusception
- Pyloric Stenosis

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No Disclosures
Take Home Message

Appendicitis occurs at any age.

Intussusception and Pyloric Stenosis have specific age ranges.
Outline

1) Appendicitis
2) Intussusception
3) Pyloric Stenosis
Outline

1) Appendicitis

2) Intussusception

3) Pyloric Stenosis
Appendicitis Age Range

Any!
Scanning Technique
10 minutes to find Appendix
Start anterior to the iliac vessels.

Most often this is where you will find the appendix.
Look from All Directions
Normal Appendix
Normal Appendix

mobile
tubular
blind-ending
no peristalsis
< 6 mm diameter
Normal Appendix

“Donut”

“Train Tracks”

Stool

Free Fluid
Appendix Fakeouts
Ileum Mimicking Appendix

Look for bumpy folds.
Ureter Mimicking Appendix
Appendicitis
Appendicitis

11 mm, focally tender
Color flow sometimes helpful.
Appendicitis

Look for inflamed echogenic fat.
Outline

1) Appendicitis

2) Intussusception

3) Pyloric Stenosis
Intussusception Age Range

4 months – 4 years

> 4 years: Worry about tumor.
Intussusception Technique
5 minutes to find intussusception

Start in RLQ.

Scan all 4 quadrants.
Normal Bowel
Normal Psoas Muscles
Normal Small Bowel

Marbelized mucosa
Normal Terminal Ileum

AIR/STOOL
Normal Ileocelecal Valve

...resembles pylorus
Normal Ascending Colon

Speckles from stool/gas.
Intussusception
2 year old with colicky pain.
Intussusception
7 year old, VPS, emesis.
Intussusception in 7 year old

...from lymphoma!
Small Bowel – Small Bowel Intuss. Presumed clinically insignificant.
2yo abdominal pain.
Inverted Meckel’s
→ Small Bowel Intussusception
→ Small Bowel Obstruction
Intussusception  Fakeouts
IC valve normally herniates slightly into cecum
Inflamed Ileocecal Valve

Sagittal

A real intussusception wouldn’t be this short.
Ileum Edema after Intussusception Reduction
Colitis Mimicking Intussusception

No Compression

With Compression
Outline

1) Appendicitis

2) Intussusception

3) Pyloric Stenosis
Pylorus Stenosis Age Range

3 weeks – 6 months
Pylorus Scanning Technique
Use liver as window to pylorus.

Place patient right-side down if need to get gas out of the way.
Normal Pylorus
Normal Pylorus

Muscular layer is hypoechoic.
Normal Pylorus

Gas in duodenal bulb confirms correct location.
Pyloric Stenosis
Pyloric Stenosis

4 mm thickness, 16 mm length
3 weeks – 6 months
Pyloric Stenosis

Longitudinal

Transverse
Pyloric Stenosis Fakeouts
Incorrect Measurements
Incorrect Measurements

7 x 15 mm

3 mm
Correct Measurements

7 x 15 mm
3 mm
To exclude pylorospasm, wait for emptying.
Outline

1) Appendicitis

2) Intussusception

3) Pyloric Stenosis
Take Home Message

Appendicitis: any age

Intussusception: 4 mo – 4 years

Pyloric Stenosis: 3 wk – 6 mo
Questions
Question 1
What is the appendix diameter cutoff for appendicitis?

a. >5 mm
b. >6 mm
c. >7 mm
d. >8 mm
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- a. >5 mm
- b. >6 mm
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- d. >8 mm

Question 2

What do you need to worry about in a 10 year old with intussusception?

a. abuse
b. infection
c. inflammatory bowel disease
d. tumor
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a. abuse
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Thank you!