AMSER RAD PATH Case of the Month:

3 yo M with rectal prolapse and hematochezia

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Patient Presentation

3 yo M presents to Peds GI clinic w/ rectal prolapse and hematochezia

PMHx: none

History: 2 months of scant bright red blood per rectum; 1 ED visit for episode of rectal prolapse - reduced in ED, patient discharged on Miralax, suspicion for intussception but no work up

ROS: (+) Abdominal pain/discomfort, (-) Anorexia, Reflux, Emesis

PE: Normal

In clinic:
- Abdominal radiograph demonstrated mild to moderate stool burden, otherwise normal
- Continued Miralax for stool softening with option for enema
Patient Course

1 Week Later

Patient bowel movements consist of "sandy, gritty" stool that is like gravel. Peds GI recommends an enema performed at home, and patient has massive blowout with frank blood. Patient presents to ED.

ED Course:

CC: Bloody diarrhea

ROS: (+) Worsening and increased frequency of abdominal pain, Anorexia

PE: no rectal prolapse, no blood seen in rectum/diaper
Patient Course

**ED Course:**

**Labs:**

- Hemoglobin/Hematocrit: 10.1/30.8
- CMP – wnl
- CRP – 0.03
- ESR — 3
- Gliadin IgA/IgG – wnl
- TTG IGA/IgG – wnl
- IgA — wnl
- Lipase — wnl

**Differential:** Intussusception, Celiac Dz
What Imaging Should We Order?
No current ACR criteria for suspected intussusception; however, medical literature agrees that ultrasonography remains the first choice diagnostic test for suspected intussusception.
Abdominal Ultrasound
Abdominal Ultrasound with Doppler
Abdominal Ultrasound – 2cm polyp

Cystic spaces in intraluminal colonic mass at splenic flexure
Abdominal Ultrasound with Doppler

Yellow arrows:
- mass with central vasculature
  affixed to colonic wall by a pedicle

Central pedicle of pedunculated polyp
Abdominal Ultrasound - 2cm rectosigmoid polyp

The Yellow Line demarcates the pedicle or stalk at the base of the pedunculated polyp (arrowheads) - "mushroom" sign
Patient Course

**ED Course:** Working Diagnosis: intraluminal juvenile polyp

Patient discharged with follow up with Peds GI for sigmoidoscopy and polypectomy and return precautions for signs of worsening anemia

**3 days later**

Patient has persistent anorexia since discharge from the ED, bloody bowel movement, and episode of severe abdominal pain. Patient presents to ED with repeat rectal prolapse.

**ED Course:**

- Rectal prolapse reduced in ED
- Admitted for bowel prep and colonoscopy
ACR Appropriateness Criteria

**Variant 1:**
Lower gastrointestinal tract bleeding. Active bleeding clinically observed as hematochezia or melena in a hemodynamically stable patient. Next step.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTA abdomen and pelvis without and with IV contrast</td>
<td>Usually Appropriate</td>
</tr>
<tr>
<td><strong>Diagnostic/therapeutic colonoscopy</strong></td>
<td>Usually Appropriate</td>
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<tr>
<td>RBC scan abdomen and pelvis</td>
<td>Usually Appropriate</td>
</tr>
<tr>
<td>Transcatheter arteriography/embolization</td>
<td>May Be Appropriate</td>
</tr>
<tr>
<td>MRA abdomen and pelvis without and with IV contrast</td>
<td>Usually Not Appropriate</td>
</tr>
<tr>
<td>Surgery</td>
<td>Usually Not Appropriate</td>
</tr>
</tbody>
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Planned procedure following visualized polyp on ultrasound

Colonoscopy Findings

3 Splenic Flexure: Single Polyp
 Colonoscopy Findings

Perianal and digital rectal examinations were normal.

One 35 mm pedunculated polyp identified at the splenic flexure and successfully removed with a hot snare and sent for pathology.

Rectum, sigmoid, and transverse colon were normal.
Pathology demonstrates an abundance of edematous lamina propria with inflammatory cells and cystically dilated glands lined by epithelium with reactive changes (non-neoplastic).

- Dilated glands filled with mucous, inspissated inflammatory debris, protein, or blood

Nota Bene: dilated glands seen on histopathology correlate with cysts visualized on abdominal ultrasound.
Final Dx:

Juvenile Polyp – Benign Hamartoma
Juvenile Polyps – Clinical Pearls

• Typically occur between ages 2-10, with peak at 3-4 yo
• Presents with painless rectal bleeding, w/ or w/o mucous, and occasionally lower abdominal pain
• Generally pedunculated (versus sessile)
• 60-80% in rectosigmoid flexure
• Pathology: benign hamartoma (85%), adenoma (<10%), hyperplastic (3%)
Juvenile Polyps – Imaging Characteristics\textsuperscript{5,6}

• Common ultrasound features:
  • Isolated intraluminal nodular or massive protrusion within bowel
  • Nodule is hypoechoic with a hyperechoic layer
  • Cysts of varying sizes (can be described as mesh-like)
  • Pedicle that connects polyp creates "mushroom" sign on ultrasound
  • Color doppler helps demonstrate the vascular supply of polyp

• Diagnostic utility of ultrasound:
  • A retrospective study of 288 patients found that ultrasound identified 64.74% of solitary polyps without colon preparation; following colon preparation, 94.96% of solitary polyps were identified via ultrasound
  • The sensitivity & specificity of US following glycerine enema were 94.96% and 100%, respectively
Juvenile Polyps – Pathological Subtypes

• Benign Hamartoma (85%)
  • Most common subtype
  • Characterized by edematous lamina propria with inflammatory cells and cystically dilated, irregular glands lined by epithelium with non-neoplastic reactive changes. As seen on previous pathology slides, glands can contain mucous, inspissated inflammatory debris, protein, or blood (which can be pushed into glands procedurally)
  • Patients with a single benign hamartoma have an estimated recurrence rate of 17%

• Adenoma (<10%)
  • Characterized by low grade cytological dysplasia
  • More common in older children and adolescents
  • More common in the setting of juvenile polyposis syndromes or chromosomal abnormalities
  • May require more frequent screening via colonoscopy/sigmoidoscopy

• Hyperplastic (3%)
  • Most rare subtype
  • Characterized by increased surface epithelium, no cystic dilation, glands are vertically arranged and not complex
Patient Course

• Patient recovered well from polyp removal and was discharged with Miralax for continued constipation

• Patient had 1 later episode of blood in stool (following a URI) and several instances of abdominal pain and straining with bowel movements

• A colonoscopy completed over 1 year later demonstrated no recurrence and normal pathology results

• Given isolated single polyp and lack of recurrence, screening guidelines do not recommend further follow up
References

1 ACR Appropriateness Criteria: Lower Gastrointestinal Tract Bleed


