What is that Weird Foreign Material in that GI Specimen?

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Respondents:

1. GIPS=88; Twitter=11
2. Academics= 63 (64%)
3. Reliable access to EMR = 78 (79%)
4. Resins never reported on the requisition= 75 (76%)
5. "Clinicians are clueless" = 1

ACCME/Disclosures

The USCAP requires that anyone in a position to influence or control the content of CME disclose any relevant financial relationship WITH COMMERCIAL INTERESTS which they or their spouse/partner have, or have had, within the past 12 months, which relates to the content of this educational activity and creates a conflict of interest.

Dr. Arnold declares she has no conflict(s) of interest to disclose.
Why are Resins Important?

1. Recent developments
2. Diagnostic accuracy
3. Potentially save lives
4. Resins are important clues to other diagnoses

Grade = D: Room to Grow

**BAS Kayexalate Sevelamer**

- Did not recognize: 12 (12%)
- Incorrect: 12 (12%)
- Correct: 68 (69%)

Resins at a Glance

<table>
<thead>
<tr>
<th>Key Features</th>
<th>Bile Acid Sequestrants (BAS)</th>
<th>Sodium Polystyrene Sulfonate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trademark</td>
<td>Many Kayexalate® Renagel® Renvela®</td>
<td>Many Kayexalate®</td>
</tr>
<tr>
<td>Target ion</td>
<td>Bile acids</td>
<td>Potassium</td>
</tr>
<tr>
<td>Clinical History</td>
<td>Diarrhea</td>
<td>Chronic renal failure</td>
</tr>
<tr>
<td>Mucosal injury</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Fish-scales</td>
<td>None</td>
<td>Yes</td>
</tr>
<tr>
<td>H&amp;E</td>
<td>Bright orange to black</td>
<td>Purple</td>
</tr>
<tr>
<td>AFB</td>
<td>Dull yellow</td>
<td>Black</td>
</tr>
</tbody>
</table>
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<td>Mucosal injury</td>
<td>No</td>
<td>Yes</td>
<td>Possible</td>
</tr>
<tr>
<td>Fish-scales</td>
<td>None</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>H&amp;E</td>
<td>Bright orange to black</td>
<td>Purple</td>
<td>2-toned pink/yellow</td>
</tr>
<tr>
<td>AFB</td>
<td>Dull yellow</td>
<td>Black</td>
<td>Magenta</td>
</tr>
</tbody>
</table>

Dirty Little Secret #1:
BAS can be Round

Dirty Little Secret #2:
Beware the Many, Many, Many BAS

Dirty Little Secret #3:
Sevelamer-Colitis can Present as a Pseudotumor
Dirty Little Secret #4:  
Resin Colors are (Sometimes) Over-Rated

BAS can Appear Black

Sevelamer can Appear Brown, Red, or Purple

Dirty Little Secret #5:  
Fish-Scales are (Sometimes) Over-Rated
Fish-Scales can be Curvilinear or Straight

Kayexalate  Sevelamer

Narrow Fish-Scales

Curvilinear Fish-Scales

BAS can have Fish-Scales

Courtesy of Dr. Oliver Szeto

Kayexalate can lack Fish-Scales

Dystrophic Calcifications  Calculi
Dirty Little Secret #6: “Doubles” Happen
- Kayexalate & BAS
- Kayexalate & BAS
- Kayexalate & Sevelamer

Dirty Little Secret #7: AFB Most Useful Special Stain
- H&E
- AFB
- BAS
- Kayexalate
- Sevelamer

Dirty Little Secret #8: Resins are Important Clues to other Diagnoses
BAS can be Clues to CMV

Kayexalate & Sevelamer can be Clues to Amyloid

Uncharted Territory:
Kayexalate in Unusual Locations
General Reporting Approaches:

- Report when present
- Emergently contact the clinician:
  - Kayexalate and Sevelamer with tissue damage
- Specific top-line:
  - Classic morphology, +/- clinical confirmation
- Descriptive top-line:
  - Non-classic morphology without clinical confirmation
  - Strange locations

Reporting Examples:

Specific Report

-“Sevelamer resins identified, See note”

Note: In the small series available, Sevelamer was sometimes associated with mucosal injury. (Optional: Dr. Arnold verbally discussed these findings with Dr. X on XX at XXPM.)

Reference:

Descriptive Report, I

-“Eosinophilic crystals identified, See note”

Note: No clinical notes are available at time of slide review.

Eosinophilic crystals are seen on H&E. These structures are yellow on AFB and are suggestive of Bile Acid Sequestrants (BAS): Colesevelam (Welchol), Colestipol (Colestid), Cholestyramine (LoCholest, Prevalite, Questran). In the small series available, BAS have no established role in causing mucosal damage.

Reference:

Descriptive Report, II

-“Basophilic crystals identified within pancreatic pseudocyst, See note”

Note: Scattered basophilic crystals are seen, which are black on AFB and suggestive of Kayexalate. Kayexalate has been associated with tissue damage. Dr. Arnold verbally discussed these findings with Dr. X on XX at XXPM.

References:
Summary

- GIT Resins include BAS, Kayexalate, Sevelamer
- 24% had not seen or did not accurately identify resins
- Awareness of dirty little secrets and chart review most helpful
- AFB most helpful special stain
- We are at just at the tip of the iceberg!