



Barium Studies – Current Status

- Dr. G. R. Jankharia

The present generation of young clinicians, gastroenterologists and radiologists shies away from ordering barium studies, because they are not exposed to the usefulness of this aspect of radiology. With proper technique and diligent involvement, these studies can be quite rewarding.

Following are the areas where barium studies make a difference.

1. Esophagus

- Besides detecting obstructive lesions, barium swallow gives an excellent idea about motility disorders of the esophagus. If the bolus does not reach the gastro-esophageal junction within 3-5 seconds, it indicates slow transit and early diagnosis of achalasia cardia (Fig. 1).
- Hypertrophy of the cricopharyngeal muscle causes dysphagia in elderly patients (Fig. 2).
- Webs are often missed by endoscopists as they are effaced when the scope is negotiated (Fig. 3)

2. Stomach

- Volvulus of the stomach and irreducible para-esophageal hiatus hernias (Fig. 4). The endoscope can enter the stomach but the axis cannot be judged when a huge hernia is present. Barium studies give a good road map.

3. Small intestine

- Enteroclysis or small bowel enema (SBE) is considered the gold standard for demonstrating strictures, mucosal changes and peristalsis. Loops can be compressed during barium enteroclysis, which is not possible in CT or MRI enteroclysis.
- In a patient with history of pain, distension

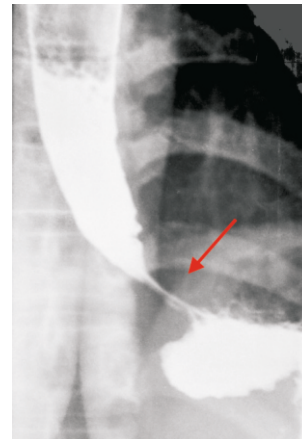


Fig. 1

Fig 1: Ba swallow shows achalasia cardia (arrow).

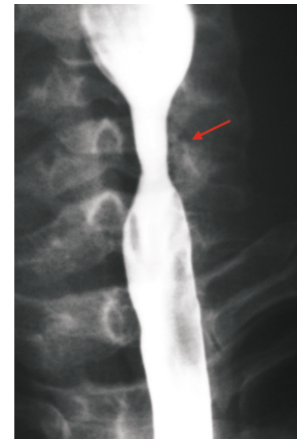


Fig. 2

Fig 2: Ba swallow shows cricopharyngeal muscle hypertrophy (arrow).

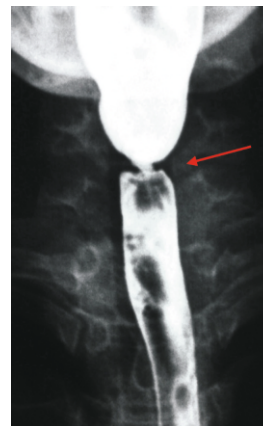


Fig. 3

Fig 3: Ba swallows shows a web (arrow).



Fig. 4

Fig 4: Ba meal shows a large para-esophageal hiatus hernia (arrows).

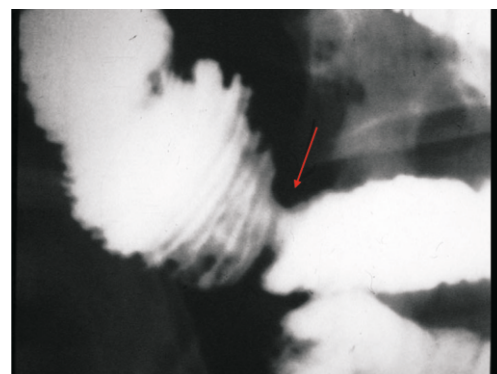


Fig. 5

Fig 5: Small bowel enema shows an ileal stricture (arrow).



At a glance:

- Barium studies are still needed for the evaluation of the gastrointestinal tract,

especially where endoscopy is fallible or not possible

- Judicious with expertise yields good results

and vomiting, pain relieved after vomiting is highly suggestive of a stricture. If the enteroclysis is normal, there is no obstruction (Fig. 5).

- Small strictures may not be appreciated on CT scan if there is no proximal dilation, but enteroclysis with compression shows strictures very well (Fig. 6).
- Still endoscopes are not easily available for the small intestine; mucosal changes, diverticulae and filling defects are appreciated by enteroclysis (Figs. 7, 8).
- Inference can be drawn about adhesions by fixed loops and unchanging configuration on compression (Fig. 9).

4. Large bowel

In an infant or a child with constipation, barium enema is very informative about the level and length of the aganglionic segment in Hirschsprung's disease (Figs. 10)

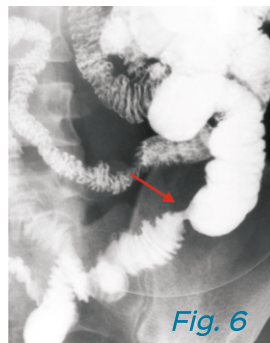


Fig 6: Small bowel enema post compression shows an ileal stricture (arrow).

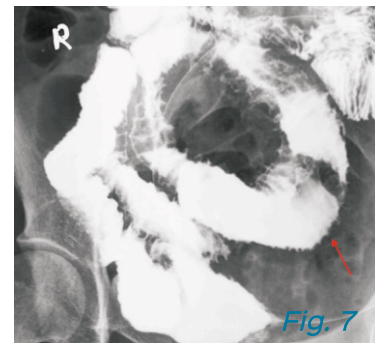


Fig 7: Small bowel enema shows ileal ulcers (arrow) in a patient with Crohn's disease

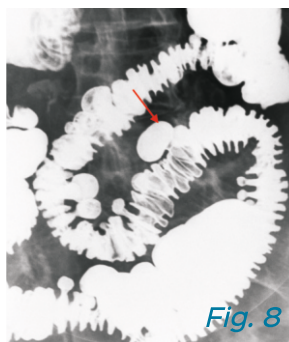


Fig 8: Small bowel enema shows jejunal diverticulosis (arrow).

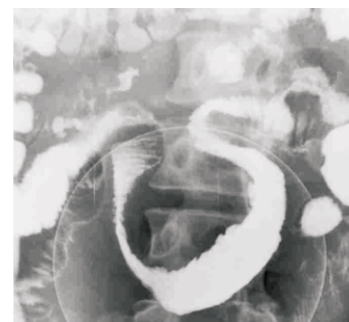


Fig 9: Small bowel enema shows an ileal loop that is fixed with abnormal configuration and angulation suggesting adhesions.



Fig 10: Small bowel enema shows ileal ulcers (arrow) in a patient with Crohn's disease

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