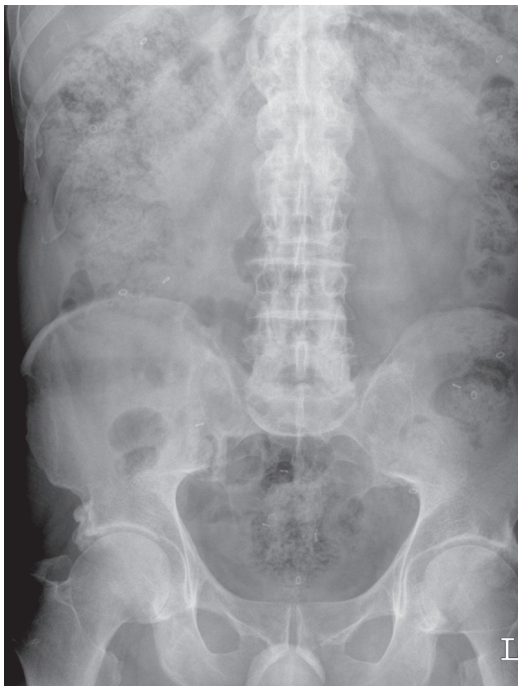
Is this overflow diarrhoea?

Usman Khan research fellow in gastroenterology, Anthony F. Macklon consultant gastroenterologist, Yan J. Yiannakou consultant gastroenterologist

**University Hospital of North Durham,
North Road, Durham,
County Durham.
DH1 5TW.
Corresponding Author: Usman Khan.**

Email: usman.khan@cddft.nhs.uk

A 59 year old male presented with a one year history of diarrhoea. He described passing variable quantities of mushy pale stool up to eight times per day, and of abdominal bloating without any associated pain. He had had no weight loss or bleeding *per rectum*. His past history included ankylosing spondylitis and protein C deficiency. His other medications at presentation included warfarin, naproxen and lansoprazole. Endomysial antibodies were not detected and a duodenal biopsy was normal. Flexible sigmoidoscopy revealed normal mucosa and faecal loading. A plain abdominal x-ray confirmed faecal loading, raising the possibility of overflow diarrhoea. A radio-opaque marker study was performed using the Metcalf protocol, which involves the ingestion of 24 markers on each of three days with an abdominal x-ray on the fourth day (Fig.1).



Question

What does this X-ray show?

What is the likely cause for his symptoms?

This x-ray shows faecal loading, but very few (fewer than 20) of the seventy-two markers are retained on this film, indicating rapid colonic transit. Slow transit would be indicated by retention of more than 38 markers.[1] This unusual combination signifies excessive stool production consistent with malabsorption. The faecal elastase concentration was high, and although further investigations failed to reveal a cause for the pancreatic failure, the patient's symptoms settled with pancreatic supplements.

Assessment of faecal loading on a plain x-ray is routinely used to support a diagnosis of constipation, but can be misleading. The use of abdominal x-rays for this purpose has only been validated in children:[2] there is considerable inter-observer variation[3] and there is only a weak correlation with transit.[4] Transit studies, on the other hand, are well validated as long as the correct methods are used.[5] They are most useful in confirming the diagnosis, but are unproven in assessing severity. The diagnosis of constipation is therefore best made by clinical criteria.

References

1. Metcalf AM, Phillips SF, Zinsmeister AR, MacCarty RL, Beart RW, Wolff BG. Simplified assessment of segmental colonic transit. Gastroenterology 1987;92(1):40–7.

2. Bongers ME, Voskuijl WP, van Rijn RR, Benninga MA. The value of the abdominal radiograph in children with functional gastrointestinal disorders. Eur J Radiol 2006;59(1):8–13.

3. De Lorijn F, van Rijn RR, Heijmans J, Reitsma JB, Voskuijl WP, Henneman OD et al. The Leech method for diagnosing constipation: intra- and interobserver variability and accuracy. Pediatr Radiol 2006;36(1):43–9.

4. Benninga MA, Buller HA, Staalman CR, Gubler FM, Bossuyt PM, van der Plas RN et al. Defaecation disorders in children, colonic transit time versus the Barr-score. Eur J Pediatr 1995;154(4):277–84.

5. Lin HC, Prather C, Fisher RS, Meyer JH, Summers RW, Pimentel M et al. Measurement of gastrointestinal transit. Dig Dis Sci 2005;50(6):989–1004.