

A Rare Cause of Small Bowel Obstruction

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No affiliations.

Background

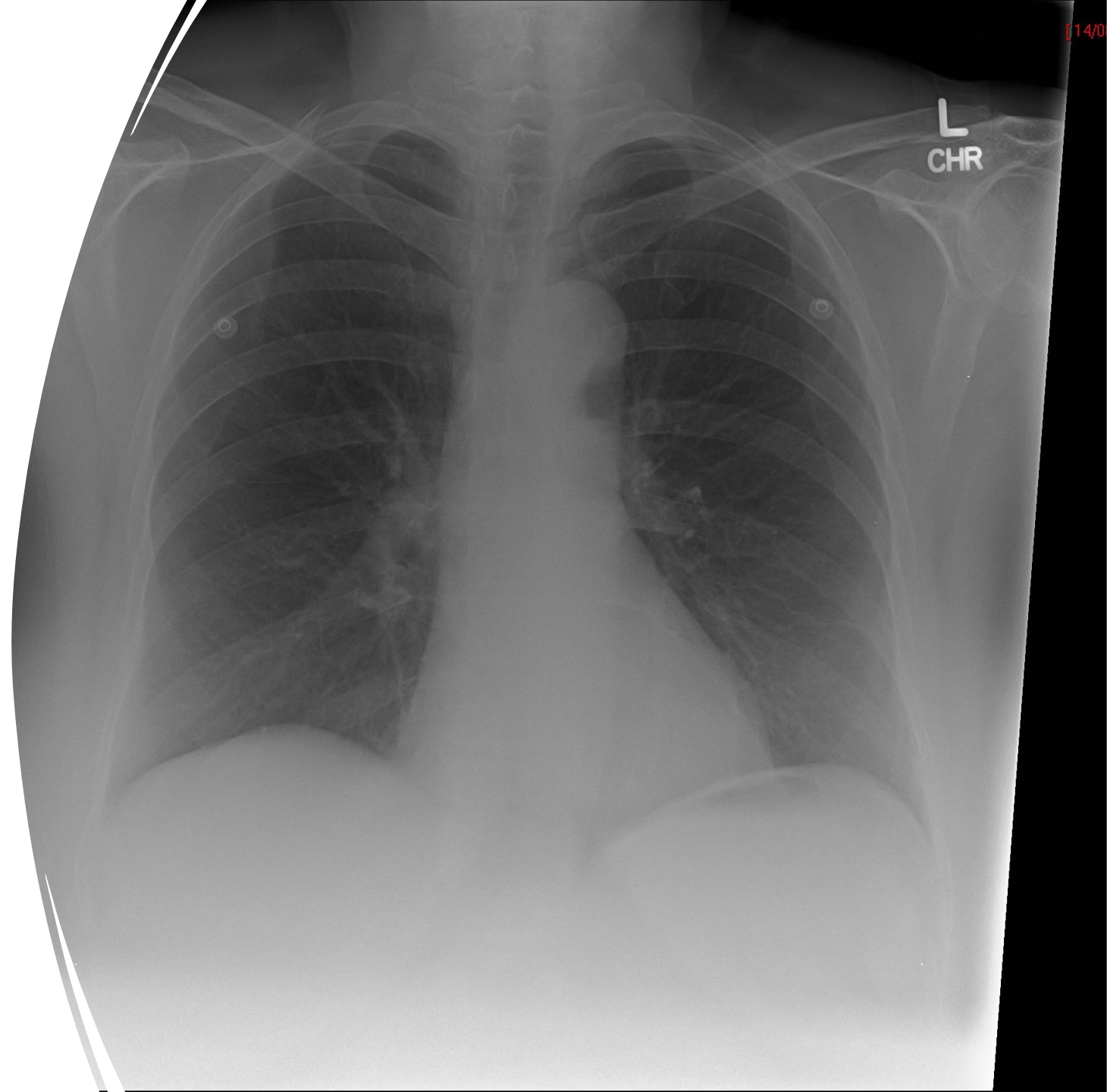
69 year old female

No significant prior past medical or surgical history.

Presented to Surgical Admission Unit with a three-day history of abdominal pain and distension.

CXR

- No perforation.



AXR

- Multiple dilated loops of small bowel down to pelvis.

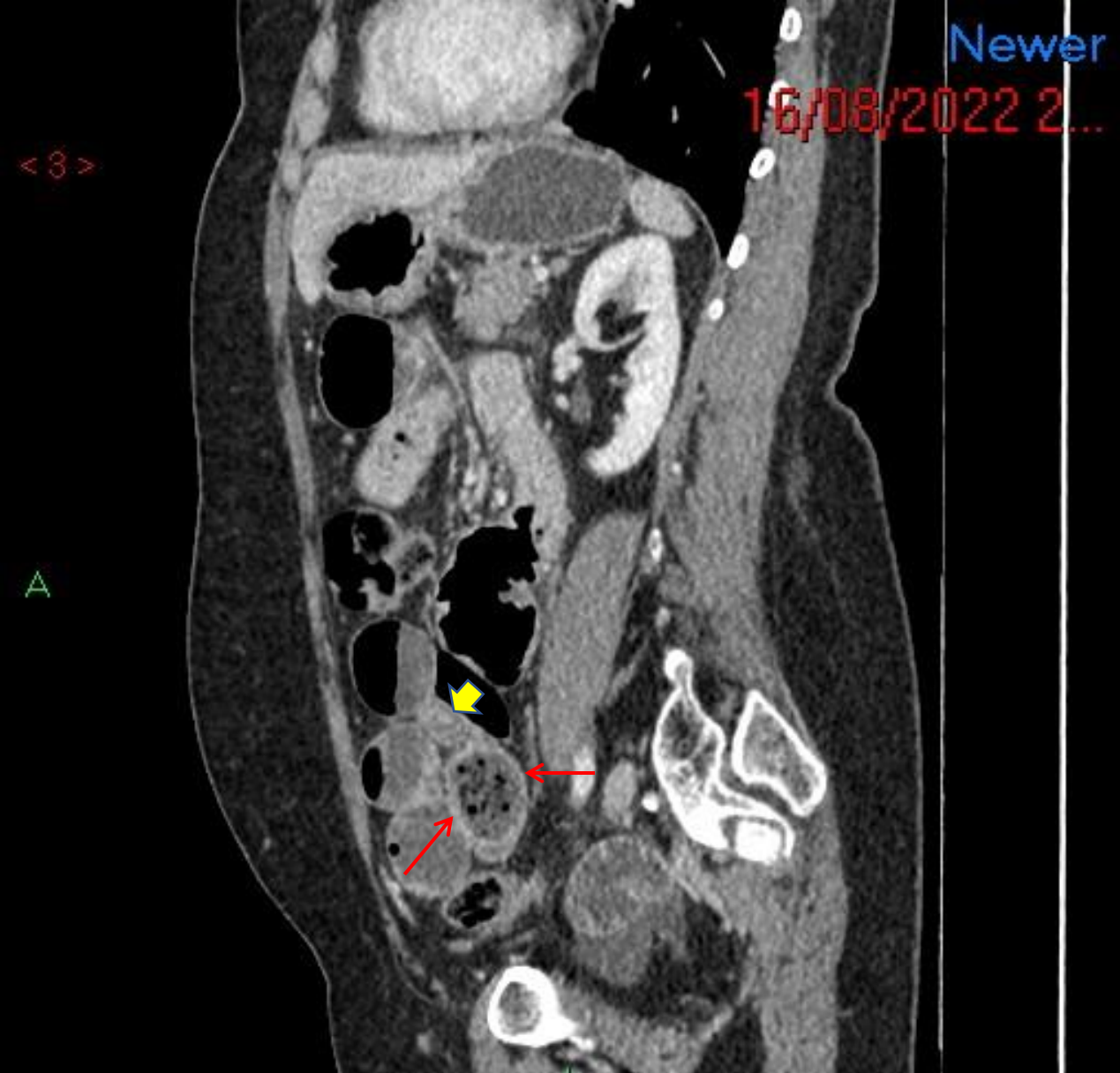
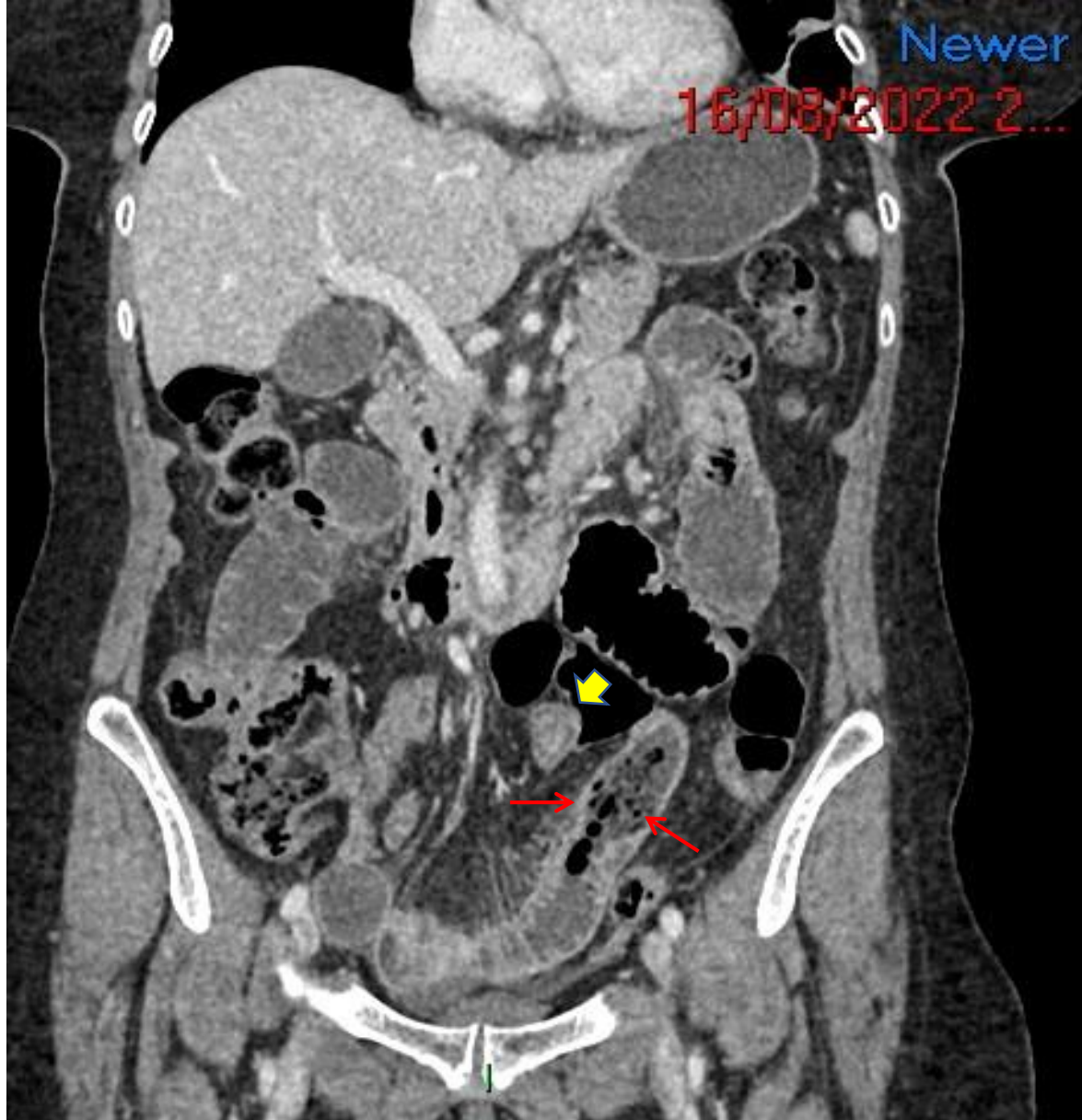


CT

Confirms small bowel obstruction (SBO) with transition point in pelvis involving the distal ileum.

'Small bowel faecalisation' noted immediately proximal to transition point but no clear obstructive cause identified - however, possibility of stricture or adhesion raised.





➡: transition point with collapsed distal ileum

→ : Mottled mass with gas bubbles immediately proximal to transition point thought to reflect 'small bowel faecalisation'

Patient went to theatre and small bowel food bezoar was found to be culprit of small bowel obstruction and was removed surgically.

Patient recovered well post-surgery and was discharged with no follow-up.

Final diagnosis: Small bowel obstruction secondary to bezoar

Learning points

Distinguishing small bowel bezoar from small bowel faeces on CT can be confusing for radiologists.

Importance of knowing how to differentiate small bowel faeces from small bowel bezoar as different treatment plan (conservative vs surgery) and when to consider this rare cause of small bowel obstruction within differentials.

What is Bezoar?

Concretion of indigestible contents in the gastrointestinal tract.

Types:

- Phytobezoar - poorly digested fibers, fruit seeds, pulpy fruits (e.g. oranges and persimmons)
- Trichobezoar - hair ball (Rapunzel syndrome)
- Pharmacobezoar - undigested tablets or semi-liquid masses of drugs
- Lactobezoar - undigested milk curds

Predisposing factors:

- previous gastric surgery
- poor mastication
- high-fibre diet

Small Bowel Bezoar or Small Bowel Faeces?

Small Bowel Bezoar	Small Bowel Faeces
Short length	Relatively long length
Encapsulating wall (+)	Encapsulating wall (-)
Floating fat-density debris sign (+)	Floating fat-density debris sign (-)
Well-defined, oval	Ill-defined or amorphous
Mottled-gas attenuating mass	Feces-like material

Delabrouse et.al found that although there is overlap of some CT findings of small bowel bezoar and small bowel faeces, a well-defined mass mottled with gas bubbles associated with encapsulating wall, floating fat-density debris sign and lesion in stomach similar to small-bowel bezoar is typical for small bowel bezoar.

An isolated amorphous mass mottled with gas bubbles is typical for small-bowel faeces.

TABLE 1: CT Findings of Small-Bowel Bezoars and Small-Bowel Feces in 27 Patients with Small-Bowel Obstruction

CT Feature of Obstructing Mass	No. (%) of Patients		<i>p</i>
	Small-Bowel Bezoars	Small-Bowel Feces	
Well-defined shape	5 (63)	4 (21)	0.072
Short length	5 (63)	7 (37)	0.398
Encapsulating wall present	3 (38)	0 (0)	0.002
Lesion in stomach similar to obstructing mass	5 (63)	2 (11)	0.011
Obstructing lesion in ileum	6 (75)	17 (89)	0.558
Floating fat-density debris sign	8 (100)	2 (11)	< 0.001

Delabrousse et al. 2008

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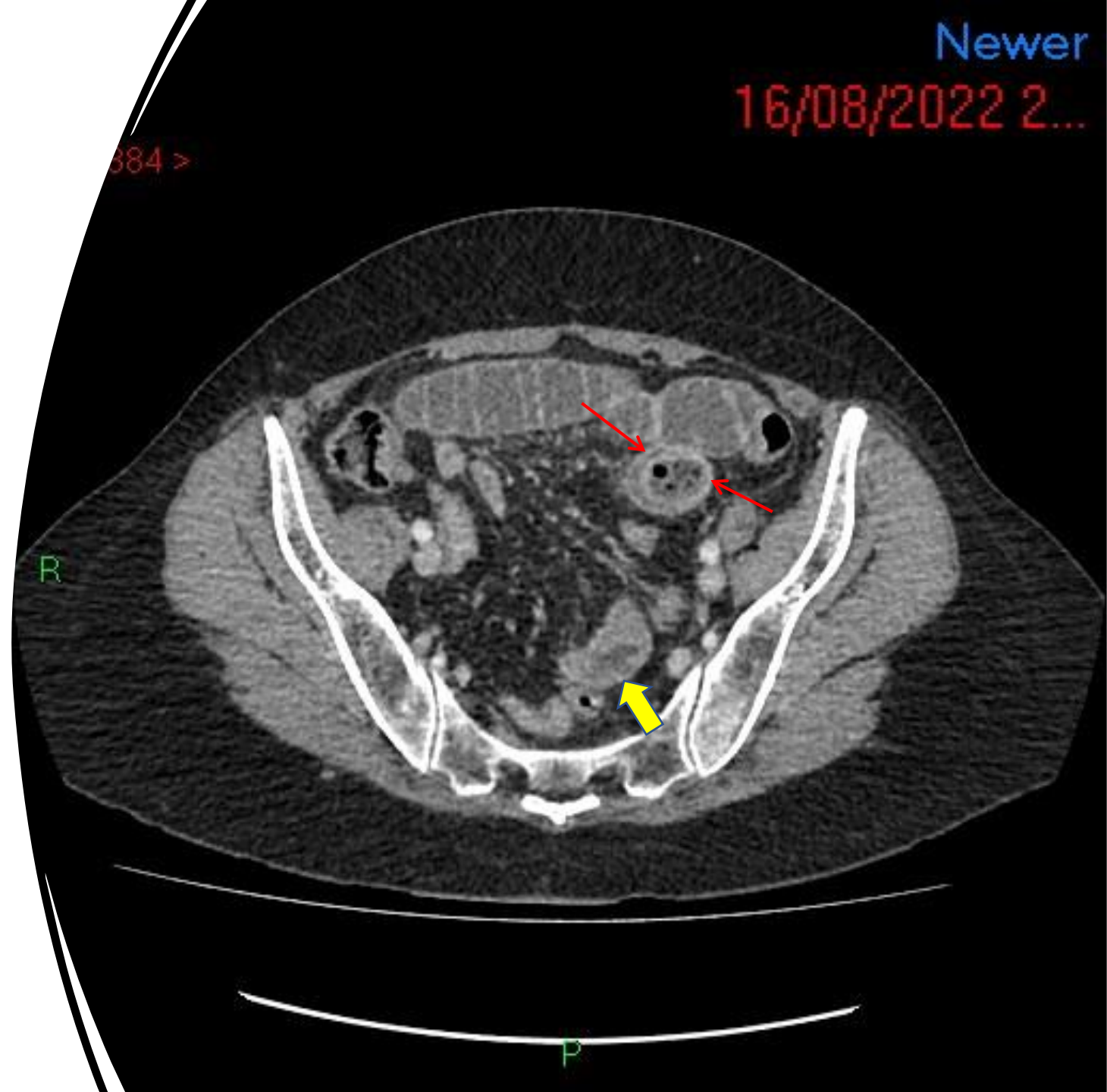
→ = small bowel bezoar

→ = floating fat-density debris

In this case, although no predisposing factor clues pointing towards small bowel bezoar include:

- well-defined
- encapsulating wall
- short length (approx. 5cm length)
- floating fat-density debris

Note: dilated fluid-filled small bowel loops anteriorly.



Floating fat-density debris sign

- First described by Delabrouse et al. in 2008
- Presence of fat density debris floating in the dilated bowel loops proximal to obstructive lesion.
- Visibility improved by use of adapted window setting (level -50 HU; width, 500HU)
- Fat density of floating debris confirmed by ROI measurements from -50 to -150 HU).



References

Delabrouse et al. Small-bowel Bezoar Versus Small-bowel Faeces: CT Evaluation. *AJR* 2008; 191:1465–1468

Ko SF et al. Small Bowel Obstruction due to Phytobezoar: CT diagnosis. *Abdominal Imaging* 1997; 22:471–473

M Lincht et al. Obstructing small-bowel bezoar: diagnosis using CT. *AJR* 1999; 173

Chen Y et al. Imaging Differentiation of Phytobezoar and Small-Bowel Faeces: CT Characteristics with Quantitative Analysis in Patients with Small- Bowel Obstruction. *Eur Radiol.* 2015;25(4):922-31