Post-Traumatic Long Segment Small Bowel Stricture A Diagnostic Dilemma

Kabeer, K.K., Karthik, S.M., Anand, C. and Ananthakrishnan, N. (2014) Post-Traumatic Long Segment Small Bowel Stricture. Surgical Science, 5, 508-511.

Introduction

- Delayed post-traumatic small bowel stricture is rare
- Caused by chronic ischemia, fibrosis and stricture-formation
- Often misdiagnosed with more common causes of small bowel stricture

Maharaj, D. and Perry, A. (2003) ***Late Small Bowel Obstruction after Blunt Abdominal Trauma****. Postgraduate Medical Journal, 79, 57-58*

Yair, E., Miklosh, B. and Orit, P. (2008) ***Delayed Presentations of Blunt Mesenteric and Intestinal Trauma in the Wake of Injury****. European Journal of Trauma and Emergency Surgery, 34, 249-254.*

Case One

- 14 year old boy
- Blunt trauma to the abdomen

- At presentation two weeks later -
  - Intermittent colicky abdominal pain
  - Abdominal examination: no significant findings

Case One

- Ultrasound abdomen: heterogeneous localized collection superior to the bladder.
  - Subsequent scans on follow-up – no progression or regression
- CECT abdomen:
  - focal, long segment, small bowel thickening from the level of the umbilicus to the dome of the urinary bladder.
  - Bowel loops appeared hypodense with mural stratification and inflamed adjacent mesentry with multiple enhancing nodes.

Case One

- With a suspicion of inflammatory bowel disease – exploratory laparotomy performed
- Intra-operative findings:
  - Segment (15-18cms)of thickened and inflamed ileum along with thickened mesentery
  - Loop was adherent to the dome of urinary bladder and sigmoid colon
  - Inflamed appendix
  - Resection of loop along with dome of bladder and end to end anastomosis with bladder repair

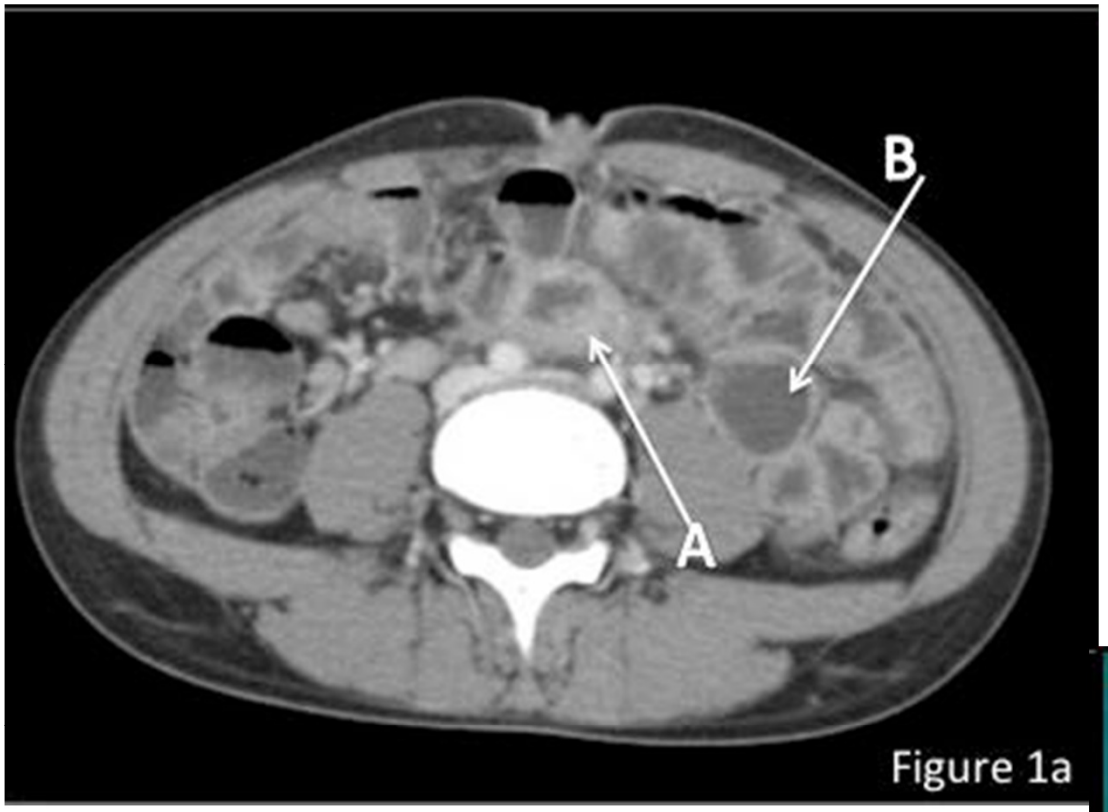


Figure 1. (a) CECT abdomen showing thickened bowel wall (A) with proximal dilated bowel loop (B);

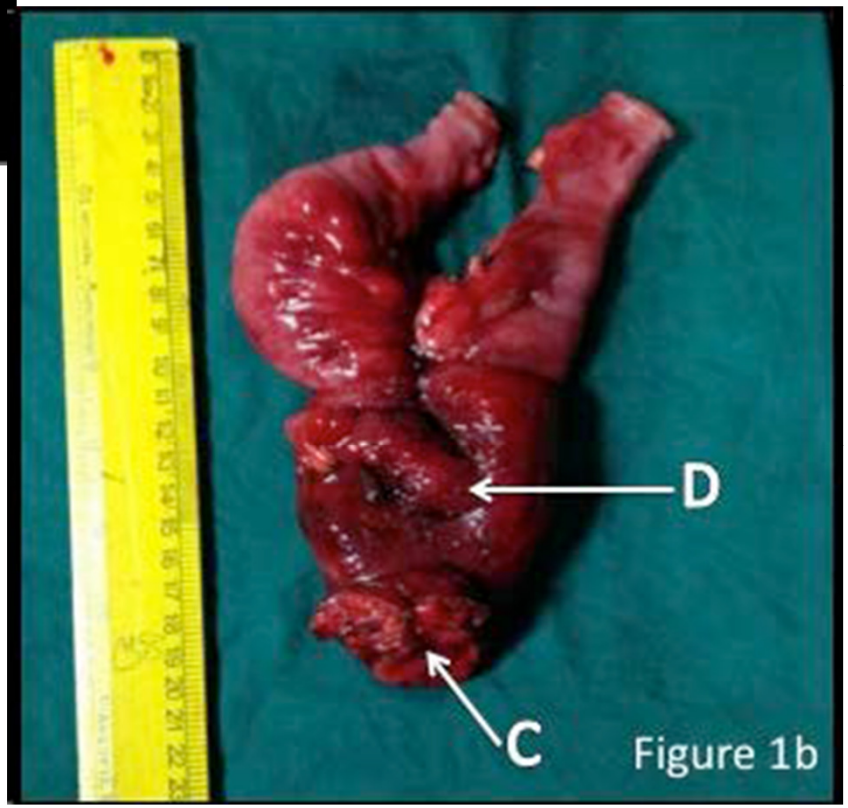


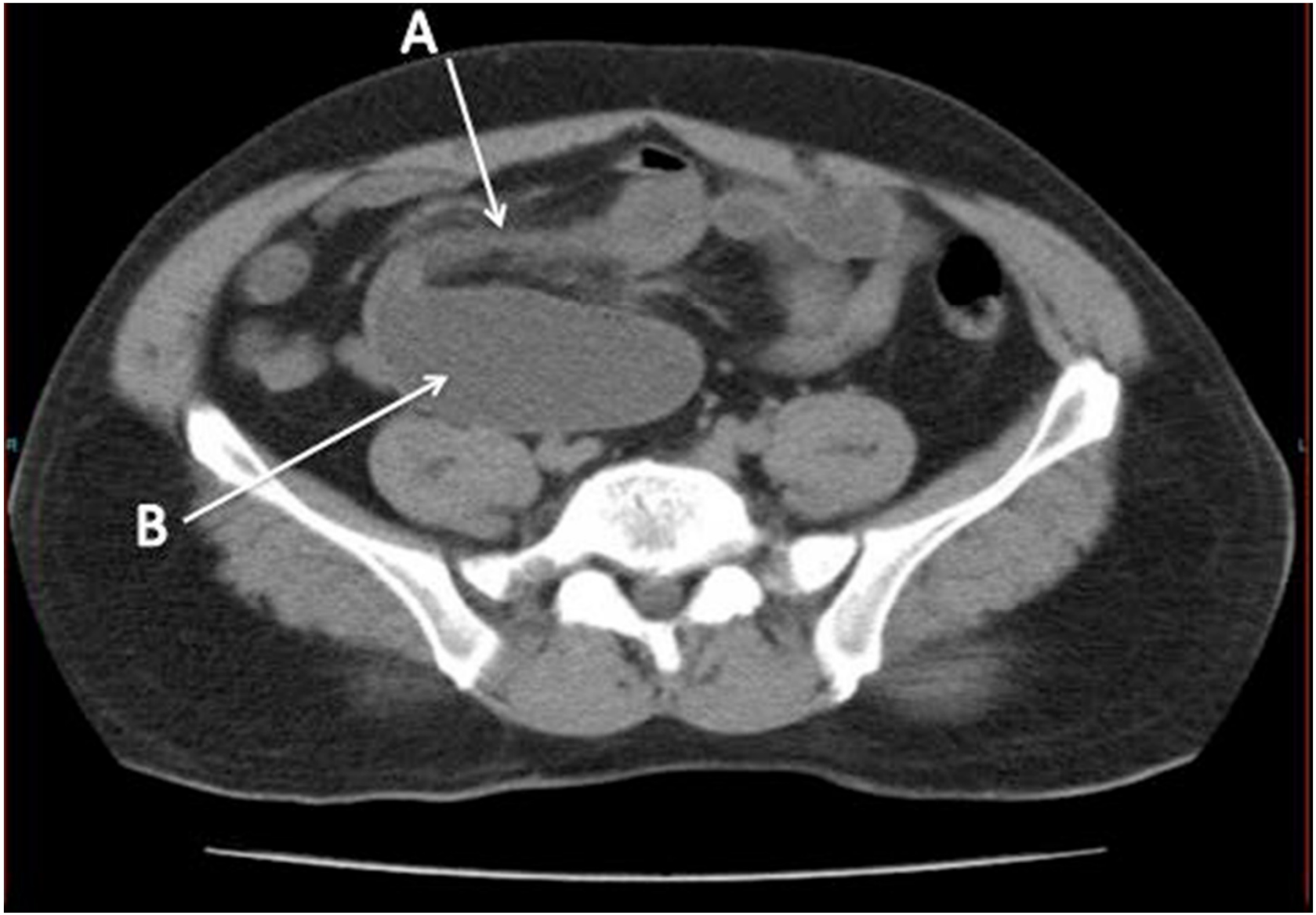
Figure 1. (b) Resected ileum with dome of bladder (C), thickened appendix (D).

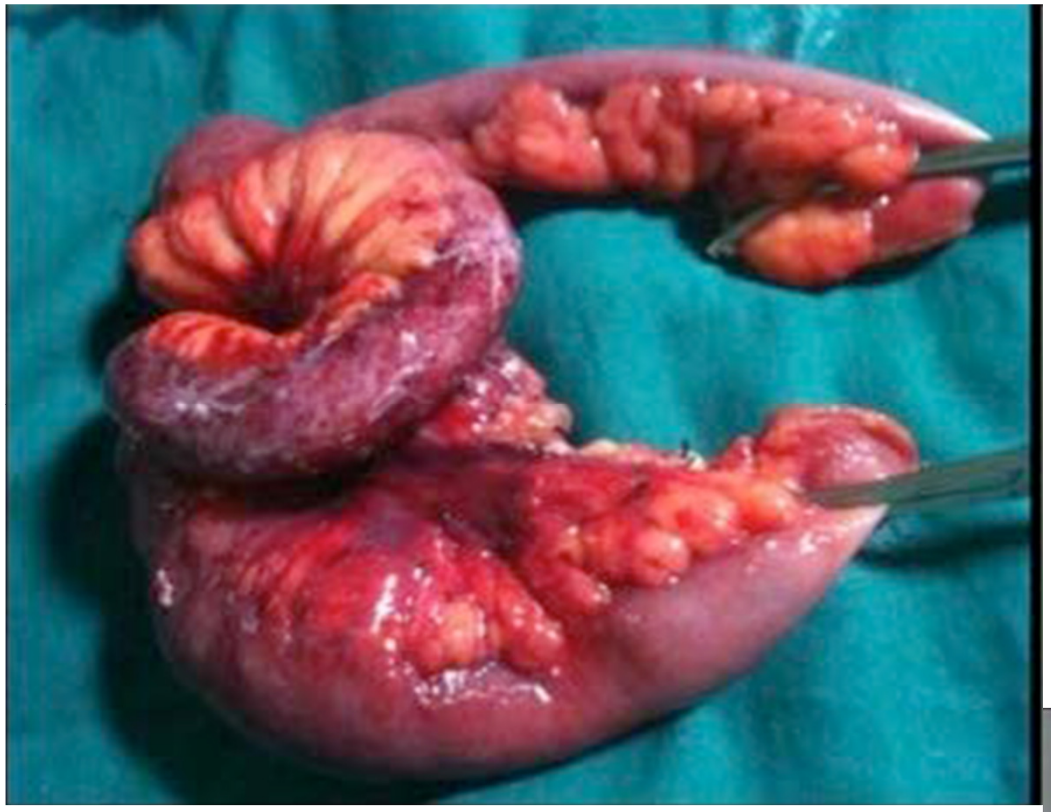
Case Two

- 45 year old male
- Intermittent colicky lower abdominal pain – 3months
  - Non-bilious vomiting 1-2 hours after oral intake for 2 weeks
- 5 months prior
  - Fall from height
  - USG abdomen and CECT abdomen – normal

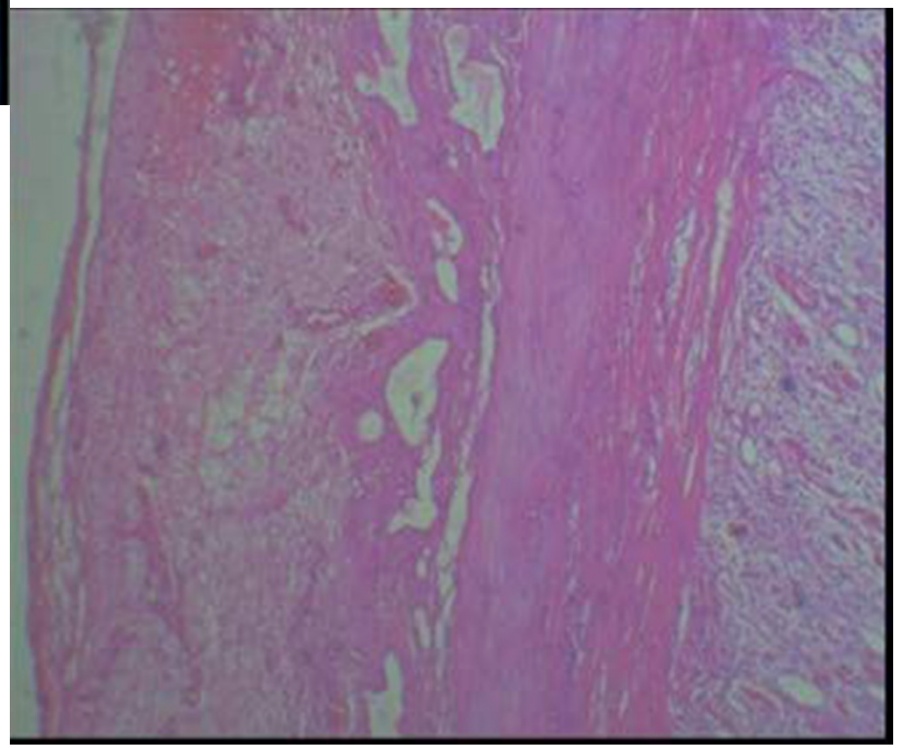
Case Two

- Repeat CECT at presentation
  - Long segment of small bowel stricture with inflamed mesentery.
- Exploratory Laparotomy
  - 15cm strictured segment of small bowel with inflamed mesentery
  - Proximal bowel – dilated and distal bowel – collapsed
  - Resection and end to end anastomosis performed


A
B



Resected ileum



Chronic non-specific inflammatory changes (Hematoxin and eosin stained slide with magnification of 40×).

Discussion

- Blunt abdominal trauma - <1% admissions
- Proximal jejunum and terminal ileum
- Sequence of events

Mesenteric ischemia

↓

Hematoma

↓

Fibrosis

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Stenosis

Bryner, U.M. and Longerbeam, J.K. (1980) ***Post-Traumatic Ischaemic Stenosis of the Small Bowel.*** *Archives of Surgery, 115, 1039*

Discussion

- Observations to aid in diagnosis
  - History of blunt trauma
  - No apparent illness prior
  - Onset of symptoms after trauma
  - Confirmation by imaging
  - No specific histo-pathological features

Kaban, G., Somani, R.A.B. and Carter, J. (2004) ***Delayed Presentation of Small Bowel Injury after Blunt Abdominal Trauma: Case Report.*** *The Journal of Trauma, 56, 1144-1145*

Discussion

- CECT sings
  - Bowel discontinuity
  - Bowel wall thickening and enhancement
  - Extra-luminal oral contrast/air
  - Intra-luminal air
  - Mesenteric infiltration

Brody, J., Leighton, D. and Murphy, B. (2000) ***CT of Blunt Trauma Bowel and Mesenteric Injury: Typical Findings and Pitfalls in Diagnosis****. RadioGraphics, 20, 1525-1536.*

Conclusion

- Clinical and radiological findings mimic inflammatory bowel disease
- Exploratory laparotomy – choice for diagnosis and treatment

Thank you