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**ULTRASOUND GROUP**

# **Intestinal Ultrasound in Crohn's Disease:** **What is your diagnosis?**

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# Disclosure

- Advisory Boards:
  - AbbVie
  - Bristol Myers Squibb
- Consultant:
  - Dynamed

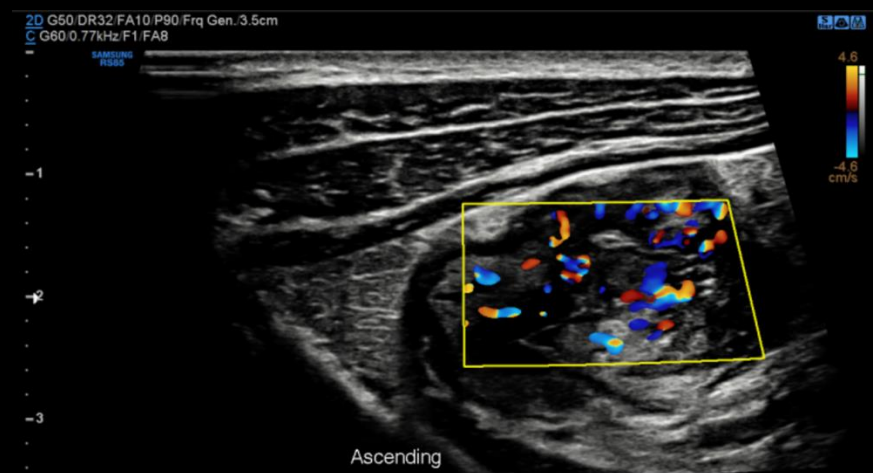
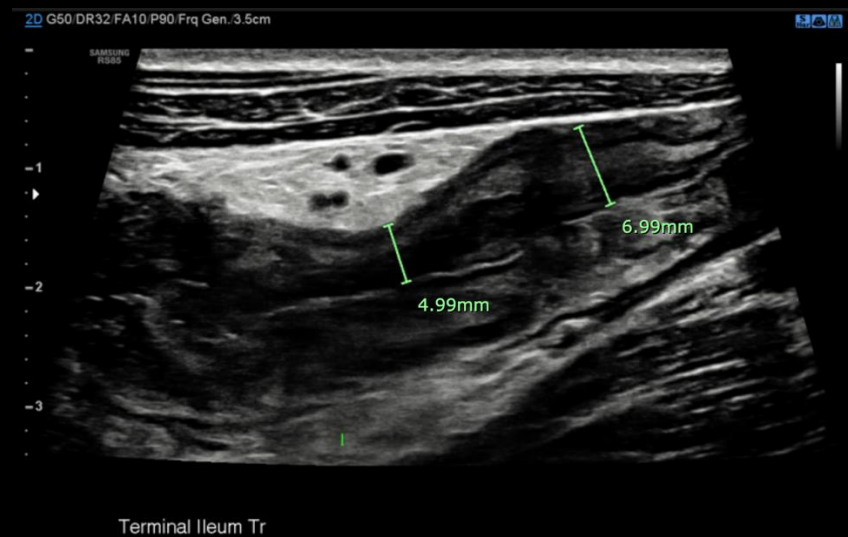
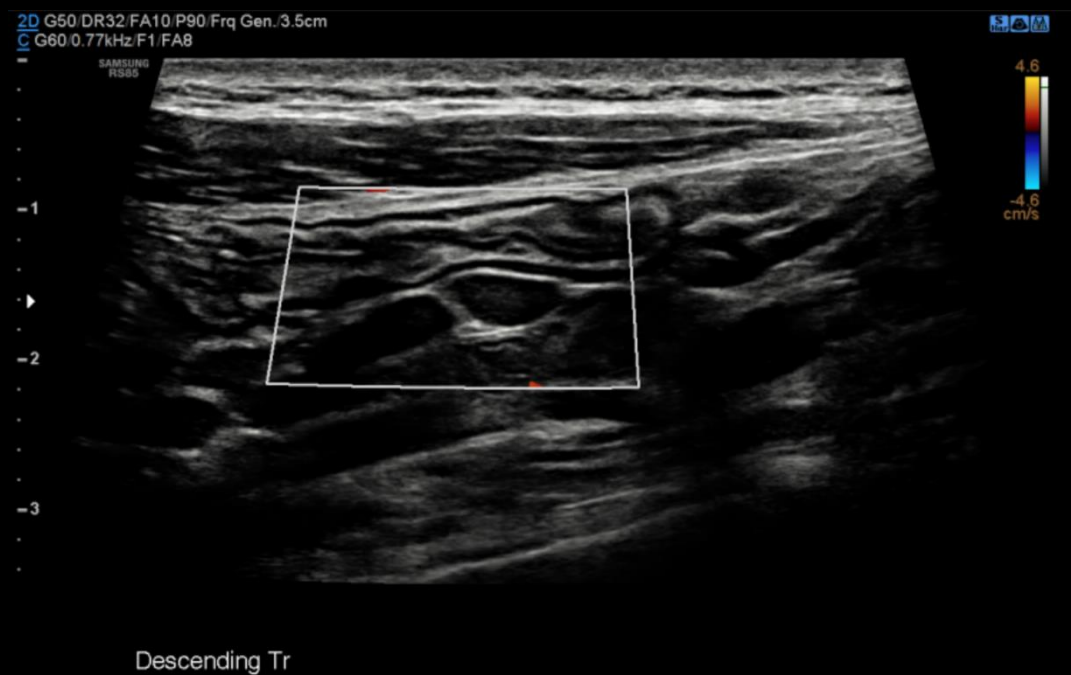


## Case 1

- 12 year old referred for 1-month of changed bowel habits
- Loose stool, 3-4 episodes daily, hematochezia
- Also endorses fatigue, generalized abdominal pain, subjective fevers, oral ulcers and diffuse joint pains
- Shigella stool test (+); fecal calprotectin >3000 ug/g
- Hemoglobin normal, MCV 75 (low), CRP 7.9 mg/dL, ESR 80 mm/hr



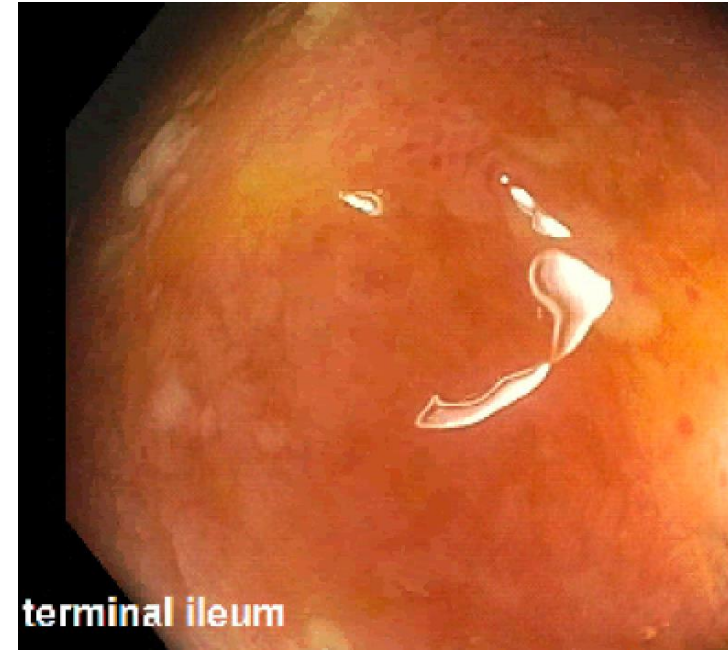
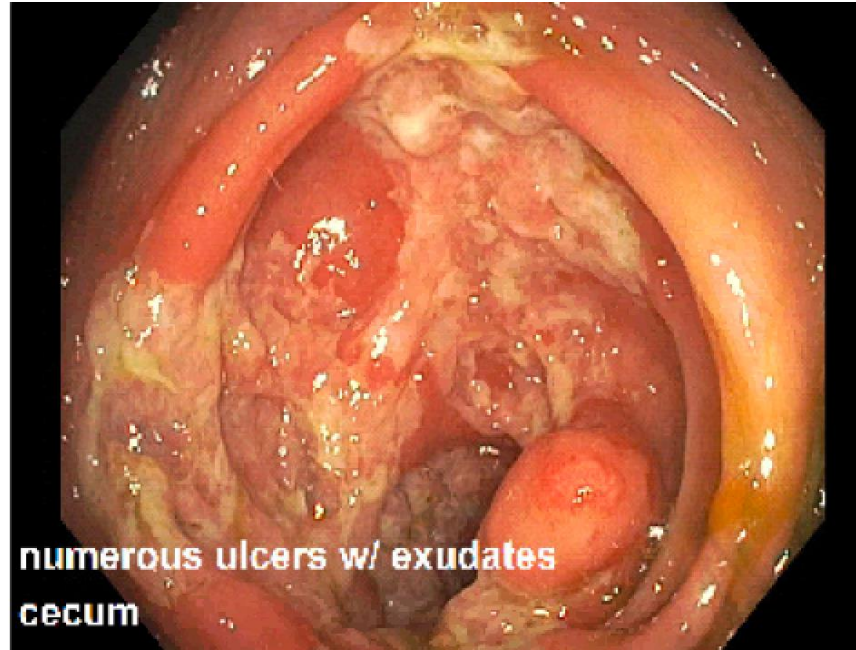
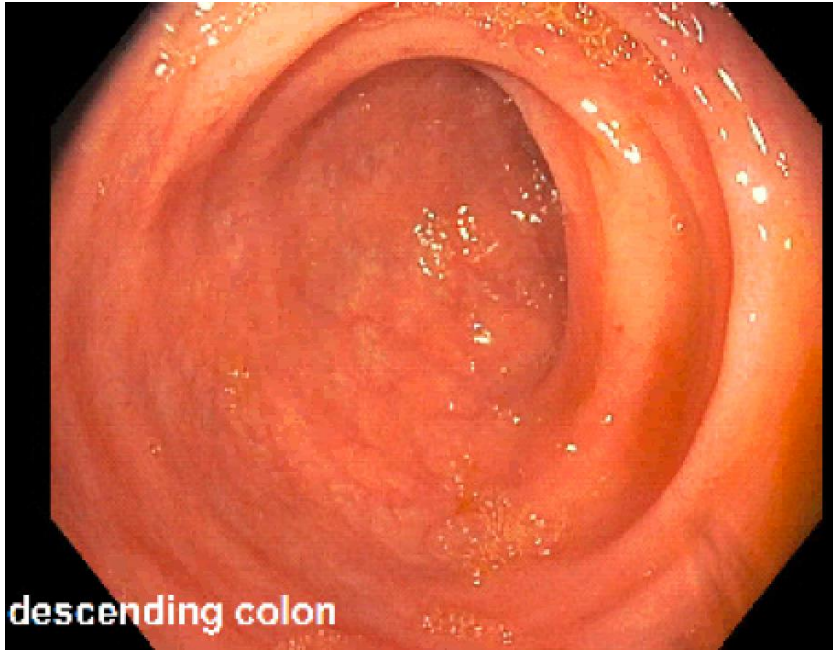






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# Index endoscopy

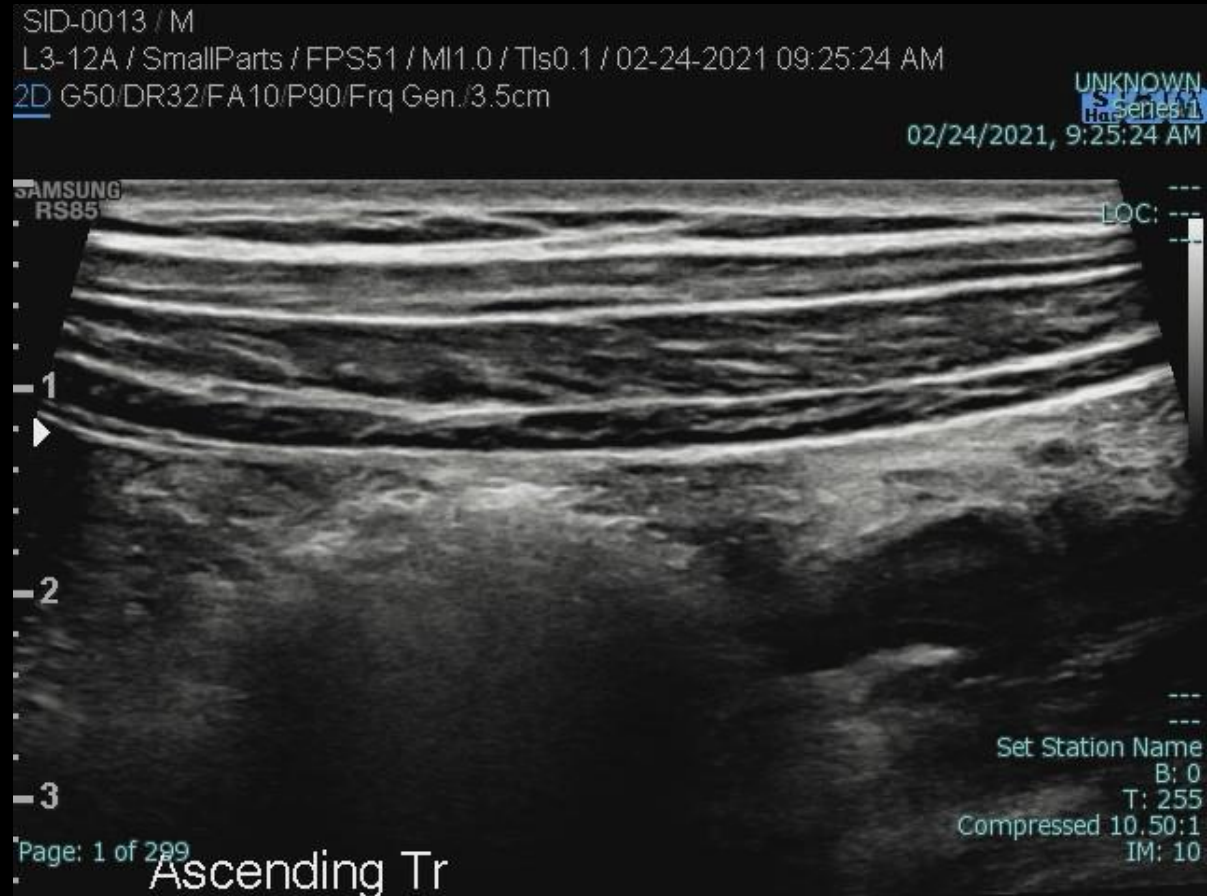




## Next steps

- Planned for exclusive enteral nutrition, not tolerated
- Transitioned to the Crohn's disease exclusion diet
- Shortly after initiated treatment with adalimumab



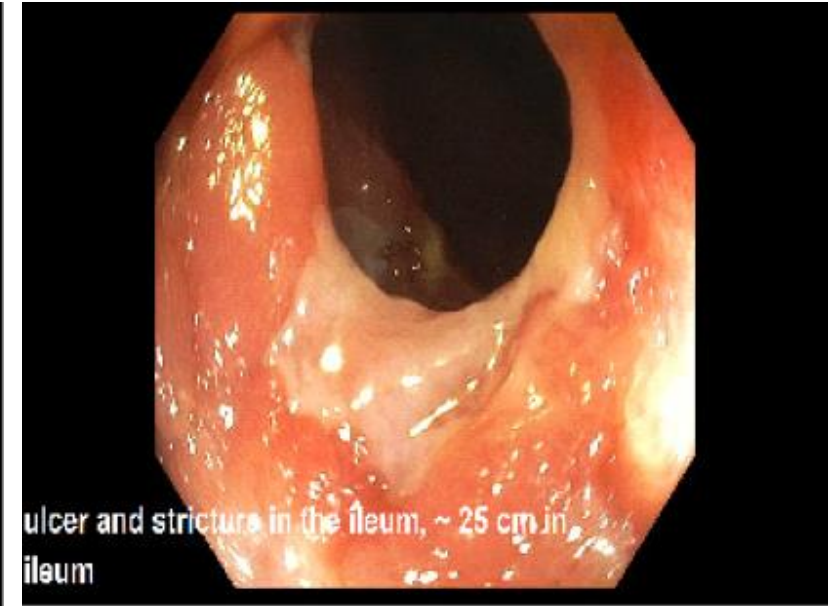








# Colonoscopy 1-year from diagnosis



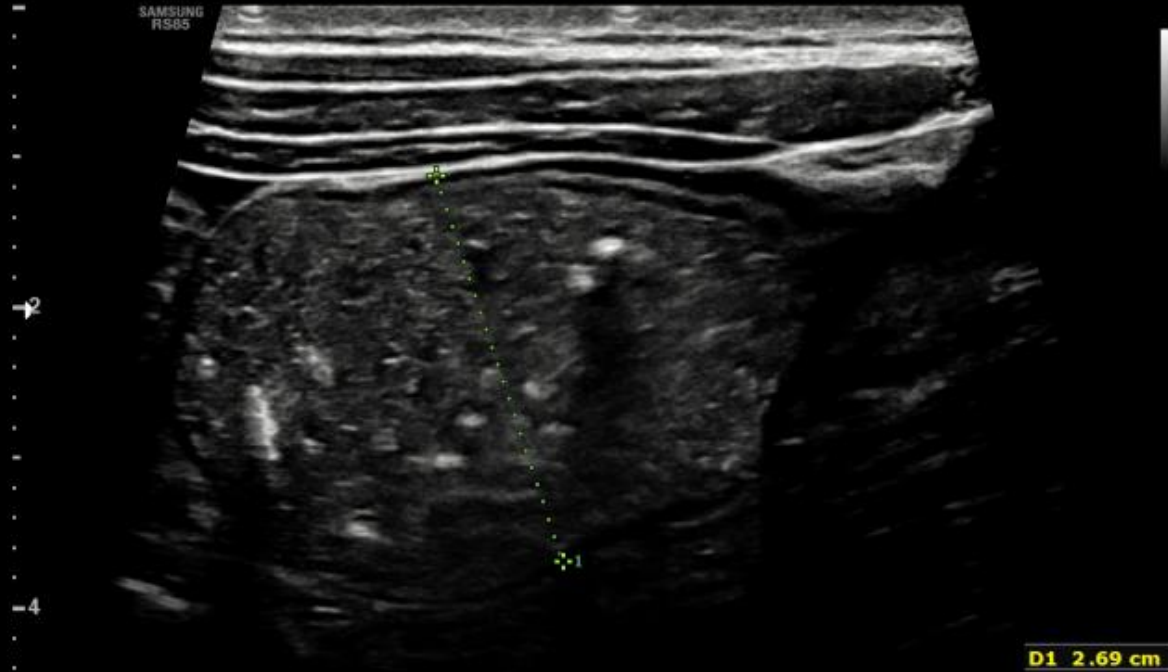






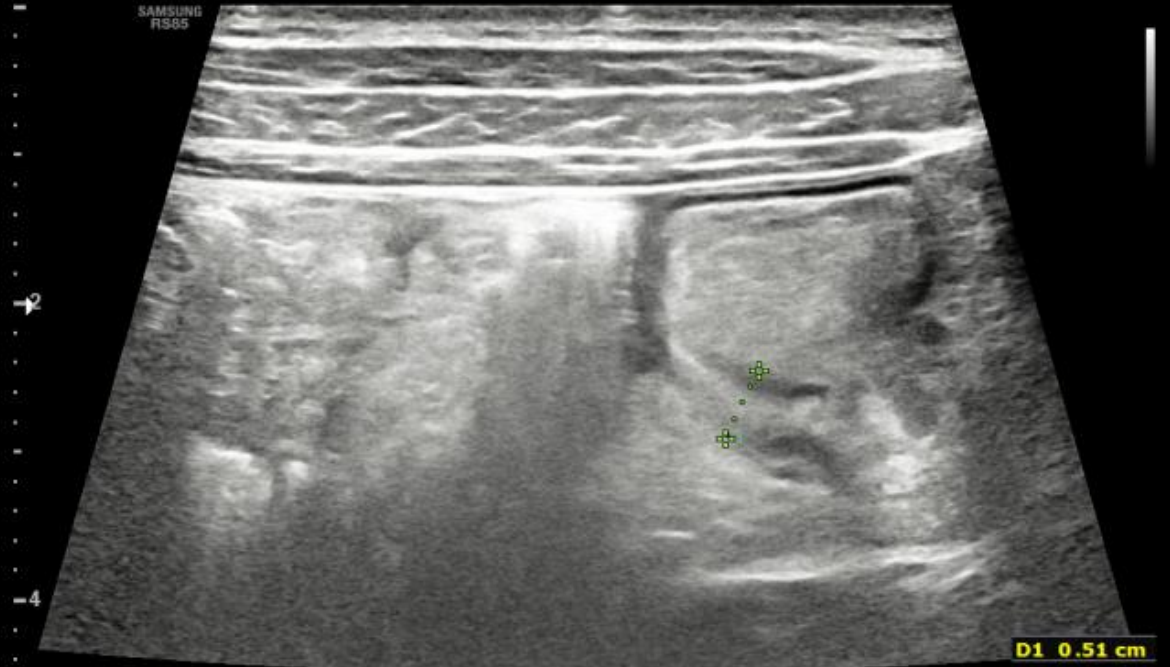


2D G50/DR32/FA10/P90 Frq Gen./4.5cm



Terminal Ileum

2D G50/DR32/FA10/P90 Frq Gen./4.5cm



Terminal Ileum



# Additional testing

- Normal MR enterography
- Normal small bowel follow through
- What next?



## Next steps

- Exploratory laparoscopy
  - 2-3 cm stricture seen 20-cm from the ileocecal valve
  - 1-2 cm focal stricture seen in the mid-ileum
- Both resected





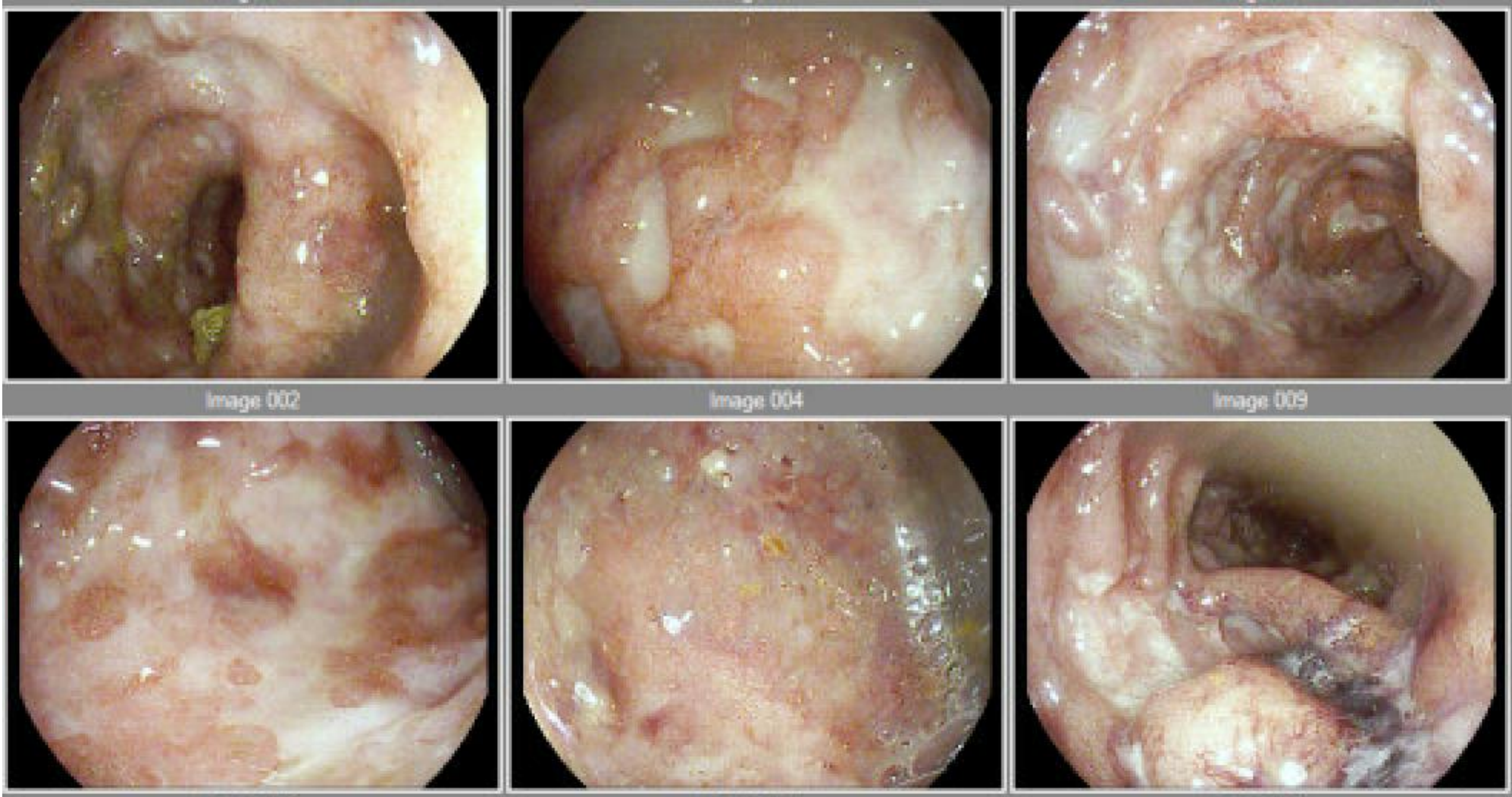
## Case 2

- 42 year old F with a history of BRCA-1 gene s/p preventative total abdominal hysterectomy and bilateral salpingo-oophorectomy and Crohn's colitis diagnosed in 1995 presents with diarrhea, hematochezia, tenesmus and urgency
- Prior Crohn's disease therapies:
  - Mesalamine, 6-mercaptopurine, infliximab, adalimumab, natalizumab (discontinued with positive JC virus)
- On vedolizumab when presented with flare
- Notable labs:
  - C-reactive protein 373 mg/L on presentation
  - C-reactive protein 280 mg/L after 72-hours IV methylprednisolone (day 3)
  - C-reactive protein 94 mg/L after IV methylprednisolone 40 mg, upadacitinib 45 mg PO daily and Crohn's disease exclusion diet (day 14)



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# Flexible sigmoidoscopy on admission

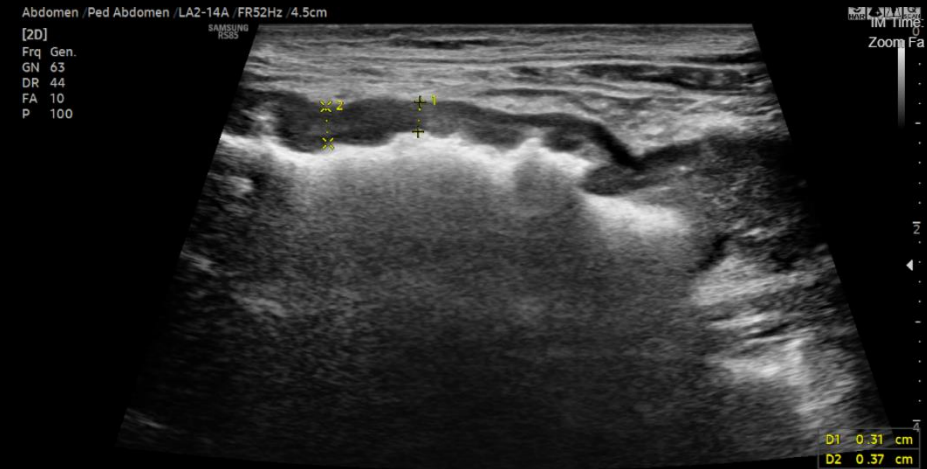
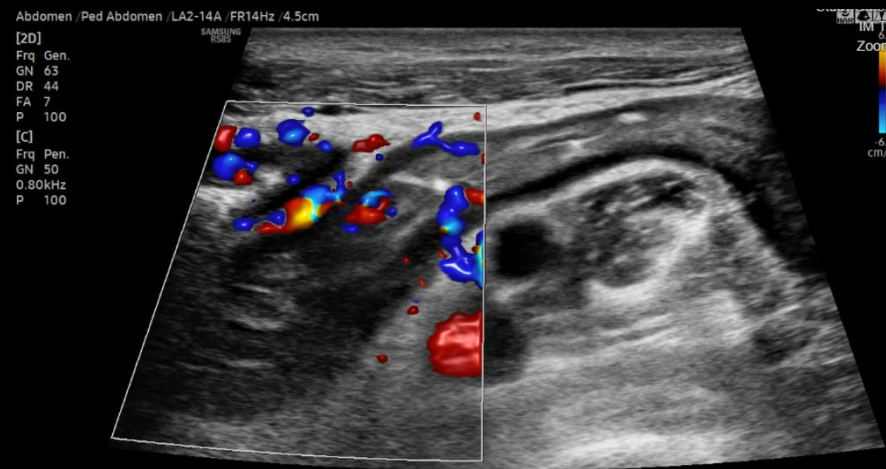
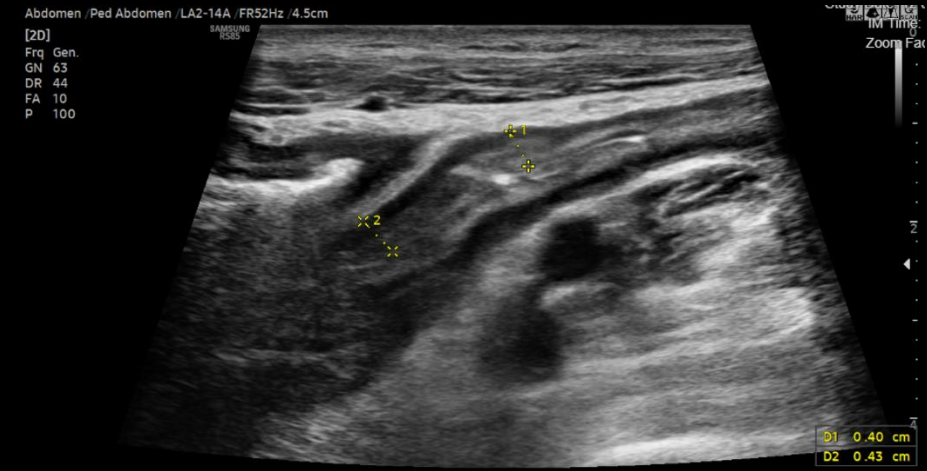


Courtesy of Rishika Chugh, MD





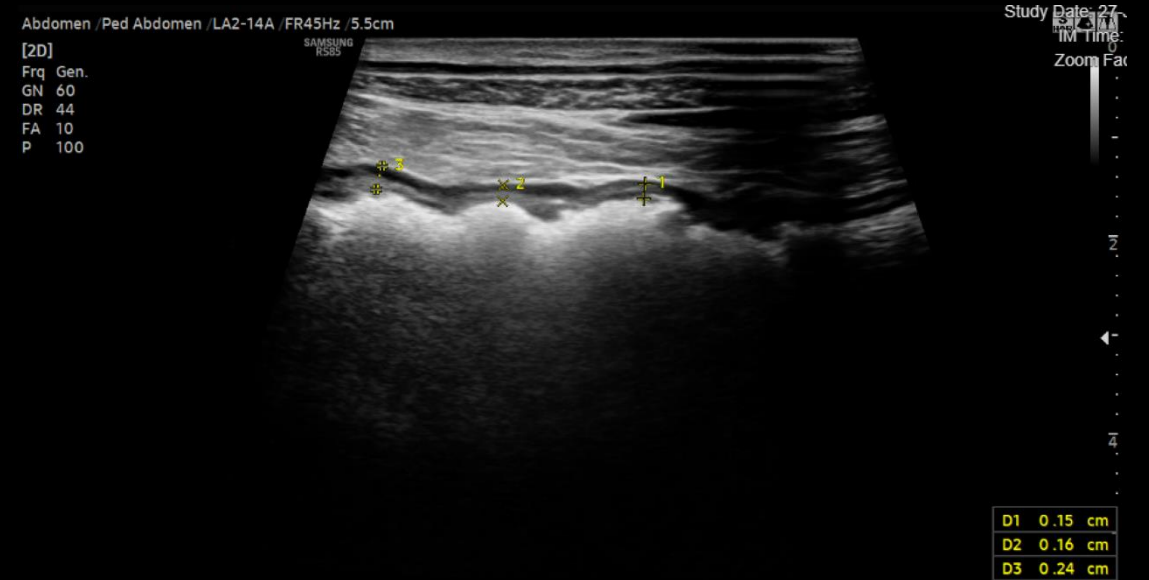
## IUS, 1-week on phase 1 CDED, upadacitinib and methylprednisolone





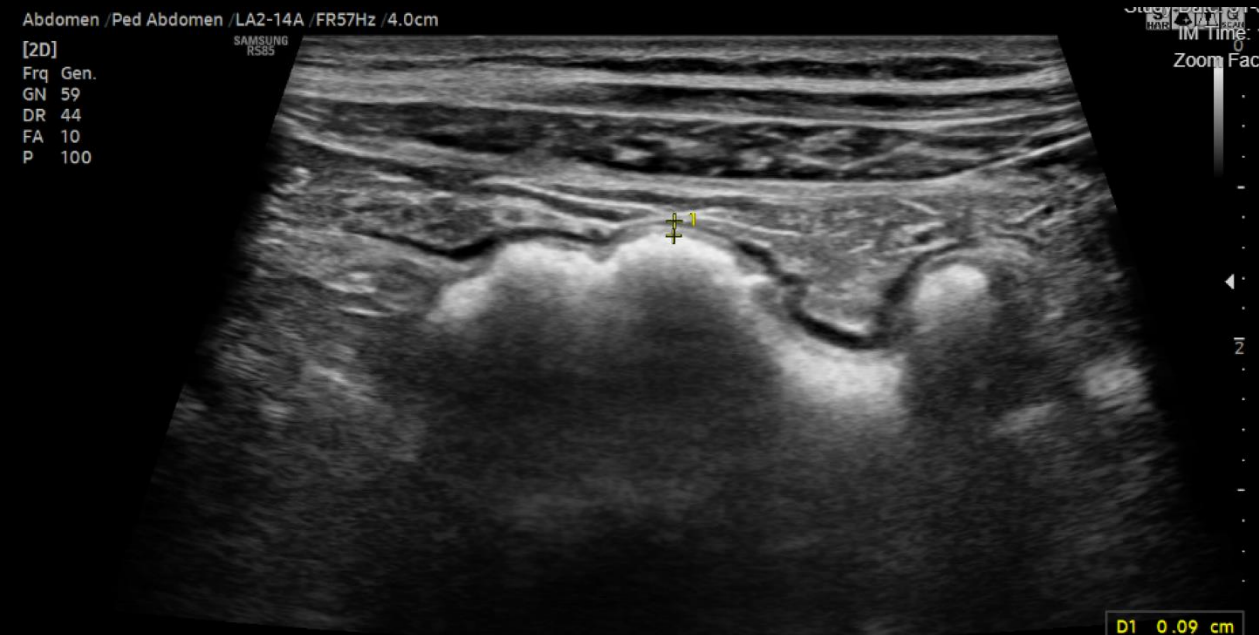
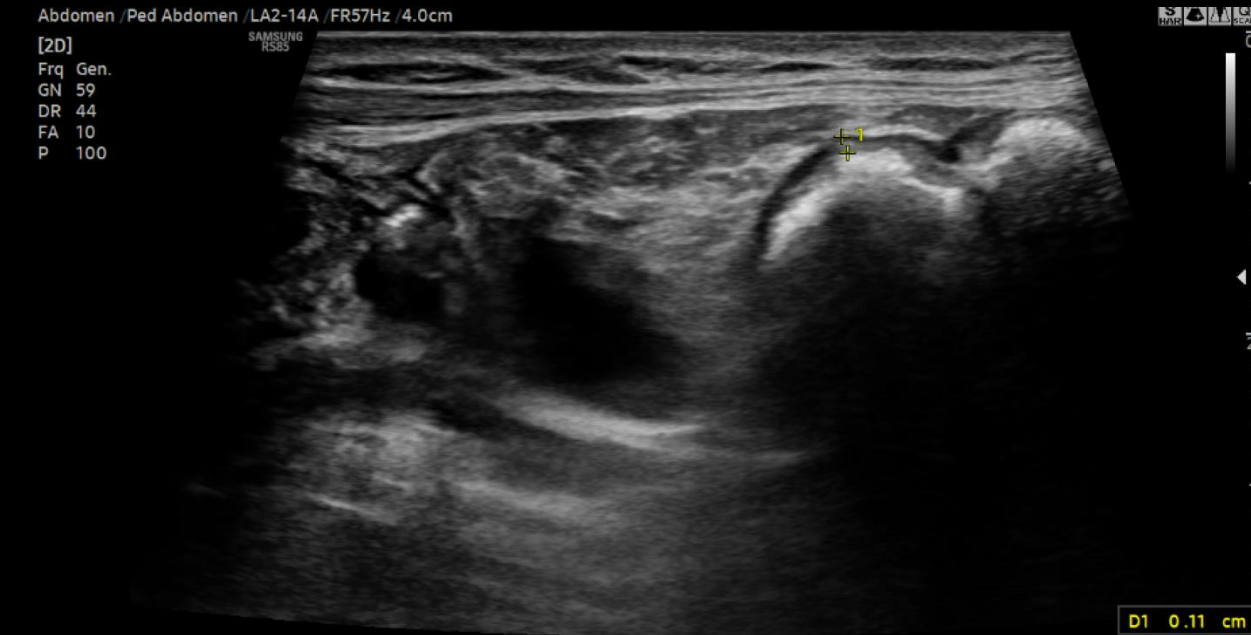


## IUS, 3-weeks: phase 1 CEED, upadacitinib, prednisone 30 mg PO daily





## IUS, 5-weeks: phase 2 CDED, upadacitinib, prednisone 15 mg PO daily





# IUS Pearls in Crohn's Disease

- Increase predictive value in endoscopic procedures
  - Not a substitute, but can help prioritize
- Useful for medication efficacy assessment: short and long term
- Dynamic study, provides “different” perspective on strictures, inflammation, and fibrosis
  - Work to be done here, but consider IUS an additional tool
  - Use in combination to clinical assessment, cross-sectional imaging and endoscopy





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# Many thanks

- Mallory Chavannes, MD – Children's Hospital Los Angeles
- Rishika Chugh, MD – University of California at San Francisco