

# Gastrointestinal Tuberculosis: a rare but important differential diagnosis of Crohn's disease assessed by intestinal ultrasound

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## Background

Gastrointestinal tuberculosis (GITB) is an uncommon, yet important differential diagnosis for Crohn's disease (CD), particularly in patients from tuberculosis (TB) endemic regions. Misdiagnosis can lead to inappropriate immunosuppressive treatment, risking dissemination of TB. This case illustrates the role of intestinal ultrasound (IUS) in evaluating and monitoring GITB in a case originally suspected to be CD.

## Methods

A 31 year old male patient, recently returned to Sweden from the Middle East, presented with postprandial abdominal pain, 15 kg weight loss, and elevated faecal calprotectin (500 µg/g). He was diagnosed with terminal ileitis based on an ileocolonoscopy in his home country and treated empirically with prednisolone and antibiotics without improvement (no histology or endoscopic images available). After referral to the Gastroenterology Department at Skåne University Hospital additional investigations were performed, including MR enterography, chest X-ray, interferon-gamma release assay (IGRA) and IUS. Microbiological testing (sputum and stool PCR, culture, and microscopy) was later performed due to suspicion of TB. Follow-up IUS was performed after anti-TB therapy.

## Results

MR-imaging revealed terminal ileitis without lymphadenopathy. The IGRA was positive. Chest X-ray showed mild apical infiltrates. Microbiology confirmed TB in sputum and faeces. IUS showed moderately thickened colonic wall in the right flexure (4mm), severely thickened ileal wall (7mm), loss of bowel wall stratification, increased Doppler signal, inflammatory fat and small amounts of free fluid (Figure 1A & 1B).

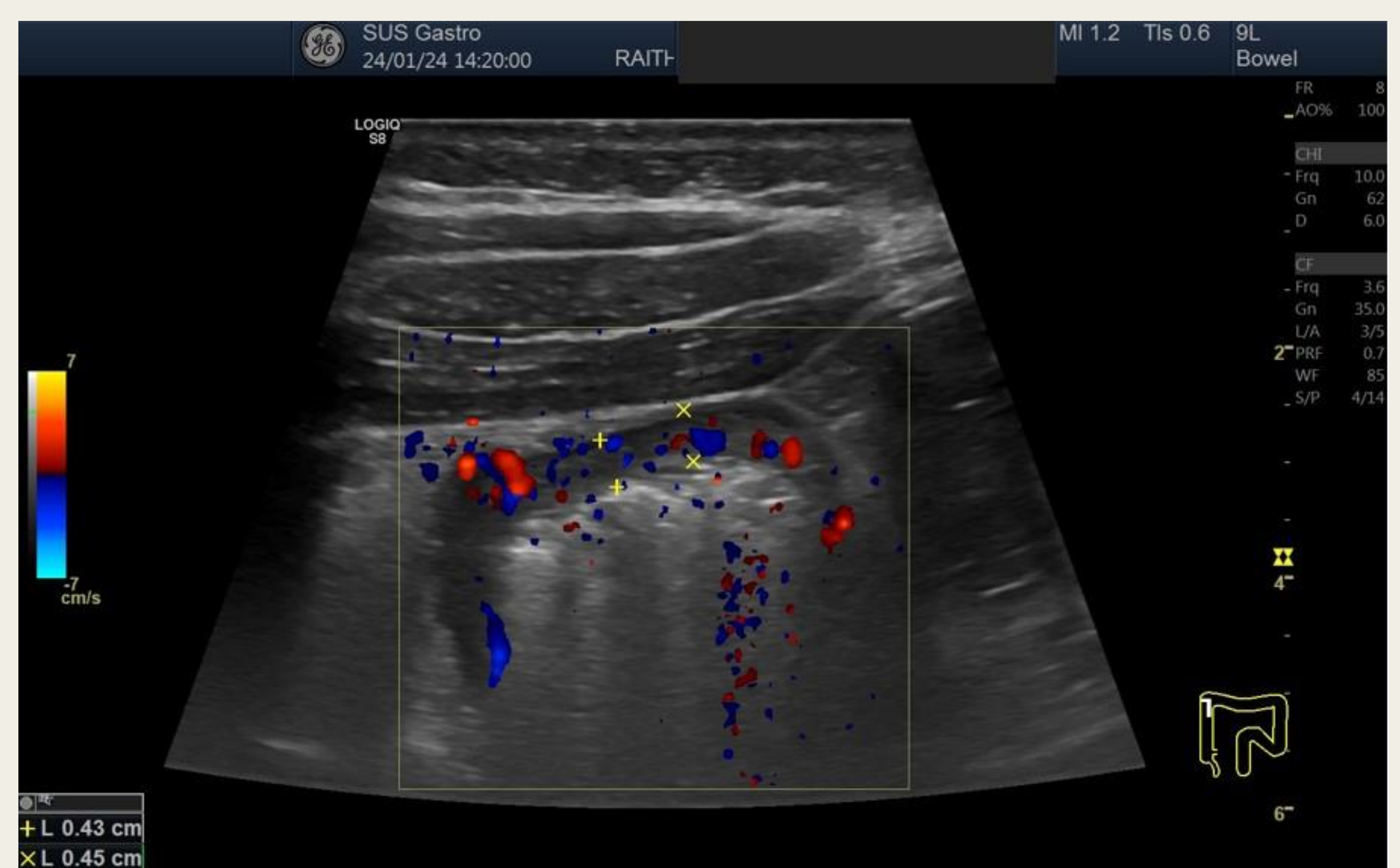
After standard anti-TB treatment, follow-up IUS 4 months later demonstrated complete resolution of inflammation (Figure 2A & 2B). The patient achieved full clinical recovery and was discharged from IBD follow-up.

## Differential Diagnostic Dilemma

This case highlights a key diagnostic dilemma encountered in clinical gastroenterology: distinguishing GITB from CD. The patient presented with symptoms and imaging findings mimicking CD and preparations were being made to initiate anti-TNF therapy. However, additional testing revealed pulmonary tuberculosis. Was the diagnosis pulmonary and concomitant ileal TB or was it pulmonary TB with synchronous CD?

Immunosuppressive therapy may be life-threatening in unrecognised tuberculosis. This underscores the critical need for thorough differential diagnosis prior to initiating immunosuppressive treatment. Another caveat is that IGRA is negative in up to 20% of patients with active TB.

In this case report, IUS could not differentiate between GITB and CD, but the inflamed segments were easily identified. Monitoring disease findings with IUS could show complete resolution of intestinal pathology, confirming treatment response to anti-TB therapy and thereby corroborating the GITB diagnosis.



**Figure 1A:** Initial intestinal ultrasound (IUS) shows pronounced bowel wall thickening (4.5mm) of the right colonic flexure with loss of bowel wall stratification and markedly increased colour Doppler signal — consistent with severe inflammation



**Figure 1B:** Initial intestinal ultrasound (IUS) shows pronounced wall thickening (on this image 5.8mm) of the terminal ileum with loss of bowel wall stratification and markedly increased colour Doppler signal — consistent with severe inflammation.

Discriminative Features Between GITB and Crohn's Disease (Adapted from Choudhury et al., 2023 - Figure 1)

| Category       | Suggestive of GITB                                           | Suggestive of CD                                        |
|----------------|--------------------------------------------------------------|---------------------------------------------------------|
| Clinical       | Shorter duration, fever, night sweats, ascites, mass         | Perianal disease, chronic diarrhoea, haematochezia      |
| Endoscopic     | Transverse ulcers, patulous ileocecal valve                  | Aphthous/longitudinal ulcers, cobblestone pattern       |
| Imaging        | Concentric strictures, necrotic lymph nodes, ascites         | Skip lesions, fistulae, fat proliferation ("comb sign") |
| Histopathology | Caseating granulomas, confluent, large, deep ulcers          | Microgranulomas, crypt distortion, transmural ulcers    |
| Microbiology   | Positive AFB/PCR/culture (low sensitivity, high specificity) | Generally negative                                      |

Note: No single feature is definitive; diagnosis requires a combination of findings.

Reference: Choudhury et al. (2023). Differentiating gastrointestinal tuberculosis and Crohn's disease: a comprehensive review. *BMC Gastroenterology*, 23, 246.

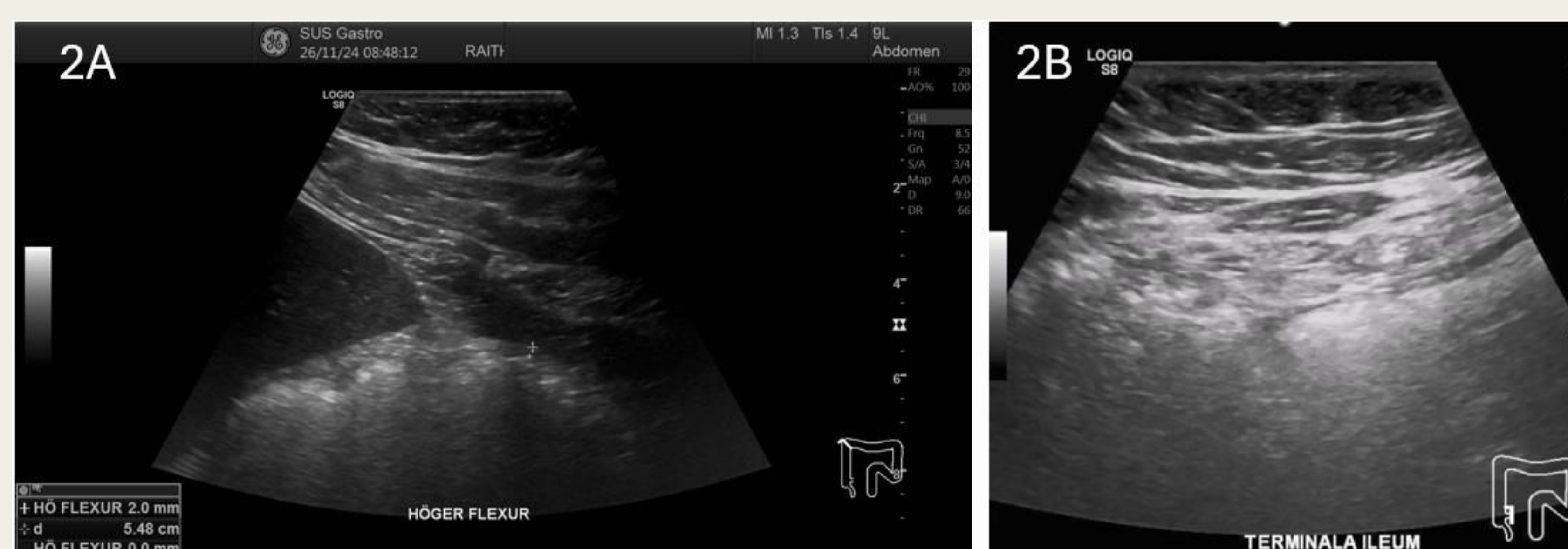
## Conclusion

This case underlines the importance of considering GITB in patients with ileitis, particularly those from endemic areas, even with negative IGRA. IUS proved a valuable, non-invasive tool for both diagnostic assessment and monitoring treatment response. Initiating immunosuppressive treatment without ruling out TB can pose significant risks.

Clinicians must remain vigilant of atypical presentations in low-incidence settings.

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**Figure 2A & 2B:** Follow-up IUS after 4 months of anti-TB therapy demonstrates normalisation of wall thickness and resolution of vascularity and inflammatory signs.