Clinical impact of indeterminate QuantiFERON-TB test results for a patient with recurrent inflammatory bowel disease flares

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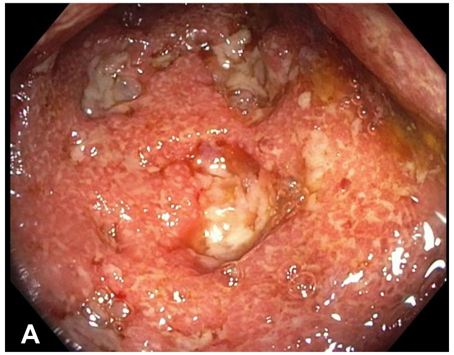
Introduction

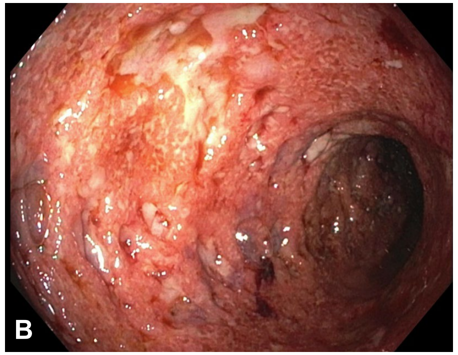
- Impact of indeterminate results cause delays in starting immunosuppressive regimens for symptomatic inflammatory bowel disease (IBD) patients
- Considering the low prevalence of latent tuberculosis infection (LTBI) in the United States, the costs and morbidity associated with investigating indeterminate QFT results may outweigh the benefits of confirming a negative result
- Case serves to highlight that the presence of indeterminate results, in this instance repeated indeterminate results, creates management dilemmas.
- Clear guidelines and further research are crucial to address barriers and optimize TNF treatment decisions

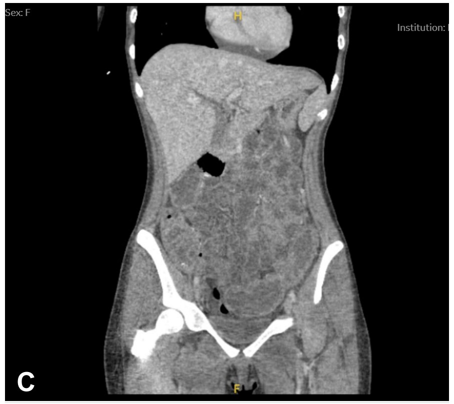
Case

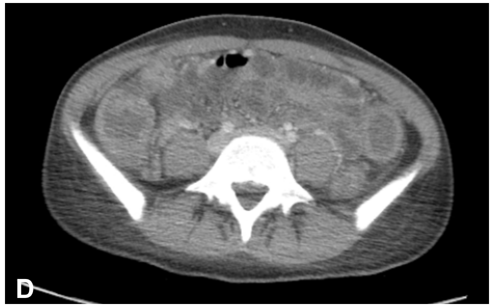
- 18F PMH newly diagnosed UC presenting with severe diffuse abdominal pain and bloody diarrhea
- First admission: ESR 27 mm/h, CRP 88.7 mg/L, WBC 17.0 x 103/uL, albumin 2.9 g/dL, Hgb 9.3 g/dL
- CTAP: severe pancolitis, with the entire colon filled with fluid, along with diffuse wall thickening and fat stranding.
- FH of IBD, autoimmune workup was initiated. QFT was indeterminate. QFT Nil, QFT mitogen, and QFT antigen, CXR all unremarkable.
- No exposure or risk factors to TB
- Flexible sigmoidoscopy: inflammation from the anus to the splenic flexure that was severe and consistent with ulcerative colitis.
- Bx: active colitis, active proctitis with cryptitis, and crypt abscess formation.
- Treated with IV methylprednisolone, which improved her symptoms. She was sent home on an 8-week prednisone taper, with follow-up in clinic for evaluation for biologic therapy.
- One month later, upon tapering down to prednisone 20 mg, the patient experienced severe abdominal pain again, this time with non-bloody diarrhea.
- Readmitted directly from GI clinic for initiation of infliximab therapy and again started on IV steroids treatment for recurring UC flare-up.
- Repeat CXR was negative. Infliximab not started due to the indeterminant QFT acquired during the previous admission.
- Repeat results required multiple days to send out and result back.
- Again treated with IV steroids, improved, and was discharged on steroid taper.
- Repeat QFT again resulted as indeterminate, further delaying the initiation of biologic therapy.

Images









Captions

A and B) inflammation from the anus to the splenic flexure that was severe and consistent with ulcerative colitis on flexible sigmoidoscopy

C and D) severe pancolitis, with the entire colon filled with fluid, along with diffuse wall thickening and fat stranding on CTAP

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Discussion

- Screening for LTBI is standard practice before starting anti-TNF therapy. However, no established methods exist for LTBI screening in patients with chronic inflammatory conditions like IBD
- IBD experience a threefold increase in direct healthcare costs compared to those without IBD.
- Patients with an indeterminate QFT and recurrent flare-ups of IBD may face several barriers to anti-TNF treatment.
- The lack of standardized guidelines or clear recommendations for managing patients with indeterminate TB tests in the context of anti-TNF therapy creates uncertainty for healthcare providers.
- Notable correlations have been shown between an indeterminate QFT and active IBD flare, indicated by peak ESR and CRP levels.
- Strong correlation between an indeterminate QFT and corticosteroid use, with a significantly higher rate of indeterminate results at a prednisone dose of ≥20 mg.
- UC diagnosis increased the odds of indeterminate QFT results and patients with indeterminate QFT are more likely to be hospitalized
- Corticosteroid use for any duration (<7 days, 7–28 days, >28 days) increased the likelihood.
- Studies have shown that over 10% of IBD patients received indeterminate results from the QFT test.
- Individual TB tests costing approximately $50, the cumulative expenses over time can become significant. Repeated TB surveillance testing has an estimated expenditure of $1,201,375, with no resulting diagnoses or treatments LTBI
- As the use of biologic therapy increases, need to focus on cost-saving interventions in the healthcare system.

Conclusion

- Addressing indeterminate results raises the challenge of determining the appropriate course of action.
- Clinical judgment becomes crucial, considering patients' TB risk factors and the likelihood of disease.
- Management requires a careful balance between the risk of LTBI reactivation and potential complications from treatment in individuals who may not be infected.
- The presence of indeterminate results raises significant management dilemmas and costs.
- Future risk stratifications can be initiated to apply to similar case presentations at our institution

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