Gastrointestinal involvement with vasculitis; A rare and difficult distinction between Intestinal Tuberculosis and Inflammatory Bowel Disease

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Introduction

Gastrointestinal involvement is common with various types of vasculitis. The diagnosis may be difficult to obtain as presentation can mimic Inflammatory Bowel Disease and infectious enteritis. We describe a 43 year old female with a history of international travel and therapy for Tuberculosis (TB) who presented with signs and symptoms of Inflammatory Bowel Disease (IBD). Lower endoscopy revealed circumferential ileal inflammation with biopsies ruling out Crohn's Disease and microorganisms. Serology and kidney biopsy reveal P-ANCA positive Crescentic Glomerulonephritis and, despite the risk of TB dissemination, this patient was treated with plasmapheresis, steroid taper and mycophenolate.

Case Report

Patient was a 43-year-old foreign-born, Spanish speaking female with a history of latent Tuberculosis who had recently completed a 3-month course of Isoniazid. She had discontinued the medication due to worsening myalgias, abdominal pain and nausea; all thought to be side effects of therapy. She presented to the emergency room due to worsening postprandial abdominal pain that was described as diffuse and severely tender that waxed and waned. She had received pelvic ultrasound showing only cystic changes of the ovaries without acute process. Labs were significant for worsening normochromic, normocytic anemia with hemoglobin dropping from 9.4 to 6.9 g/dL with normal Ferritin and B12 levels and low Folate level at 4.2 ng/ml. Acute kidney injury with initial creatinine level (crt) of 2.49 mg/dL which later climbed to 4.42 mg/dL. Elevated inflammatory markers with a CRP of 44.37 mg/L, ESR of 80 mm/hr, and Fecal Calprotectin level of 375 ug/mg. Cross sectional imaging without contrast due to AKI showed mild retroperitoneal lymphadenopathy, multiple calcified lymph nodes, and thickened/inflamed loop of small bowel. There were edematous/inflammatory changes in the surrounding fat. Findings were most suspicious for severe terminal ileitis.

Gastroenterology was consulted for concern for GI bleed versus IBD flare vs Intestinal Tuberculosis (ITB). Colonoscopy revealed normal rectal exam and colon. The small bowel was intubated showing a normal distal ileum **(Figure A)** however the following 5-7 cm of small bowel showed continuous severe ulcerative inflammation with erythema and spontaneous bleeding **(Figure B)**. More proximally, the ileal mucosa was again normal appearing. Biopsies revealed fragments of terminal ileal mucosa with intact to reactive appearing architecture with lamina propria showing areas of increased neutrophils that extend into surface epithelium and show features of erosion/ulceration. There were no granulomas identified and Acid Fast Bacilli (AFB) stain was negative.

Over the course of her hospitalization, she was treated with broad spectrum antibiotics. She began to develop worsening kidney insufficiency and later required hemodialysis. Multiple urinary analysis showed persistent proteinuria. Suspicion for vasculitis led to serology evaluation with positive P-ANCA. Renal ultrasound revealed bilateral echogenic renal cortices with minimal thinning which could suggest chronic renal disease and was otherwise a normal ultrasound of the kidneys.

Case Report

A subsequent CT guided core renal biopsy showed Crescentic Glomerulonephritis with segmental sclerosis and severe interstitial fibrosis and tubular atrophy. Arterial intimal fibrosis and arteriolar hyalinosis were absent. She was treated with hemodialysis, plasmapheresis and high dose steroid therapy despite the risk of disseminated TB. Patient and family eventually decided on seeking a second opinion at a tertiary center and were subsequently transferred. Tertiary center specialist's diagnosed our patient with drug-induced SLE along with the Crescentic Glomerulonephritis and began treatment with mycophenolate, prophylactic Bactrim and steroid taper.

Discussion

Vasculitis is inflammation of blood vessel walls and occurs at least some time during the course of the disease (2). From the various forms of vasculitis, mainly IgA Vasculitis (Henoch Schoenlein Purpura), Eosinophilic granulomatosis with polyangiitis (Churg-Strauss) (EGPA), and Variable Vessel Vasculitis (VVV), these diseases have shown to induce signs and symptoms with gastrointestinal involvement (1,2). Abdominal pain is the most common symptom followed by GI bleeding and systemic symptoms including dyspnea, chest pain, headache or peripheral edema. This clinical picture overlaps with patients presenting with IBD and ITB, and like vasculitis and IBD, ITB is mainly a disease of young females mainly associated with the ileocecal region of the GI tract. Several studies have investigated GI involvement with vasculitis and have identified endoscopic characteristics of patients with vasculitis in an effort to compare and contrast these diseases to IBD and infections. Certain patterns were associated with the varying vasculitis with varying descriptions of mucosal changes and distribution patterns of various vasculitis diseases throughout the GI tract (1,4).

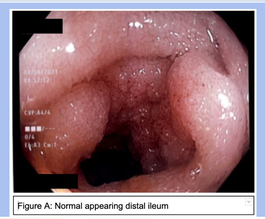

Figure A: Normal appearing distal ileum

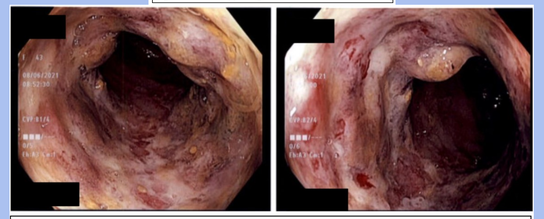

Figure B: continuous severe ulcerative inflammation with erythema and spontaneous bleeding of the ileum

Discussion

When compared to IBD, a patient with VVV may have round or oval shaped, punched-out lesions and without aphthous ulcers while a patient with Crohn's disease will typically have irregular, longitudinal ulcers with cobblestone appearance with aphthous lesions (7,9). These findings contrast with the endoscopy findings of ITB which include ulcerative, hypertrophic and ulcero-hypertrophic mucosa with transverse ulcers and deformed ileocecal valve.

Histologically, ITB pathology will see multiple large caseating granulomas per high power field with positive Acid Fast Bacilli (6,7,10). With Vasculitis, characteristic histological findings are mainly described as polymorphonuclear leukocyte infiltration or leukocytoclastic vasculitis (1,4,5). This differs from patients with Crohn's disease as they typically have non-caseating epithelioid granulomas (5,10). These various studies of GI disease with vasculitis also confirmed that biopsies are low yield compared to dermatologic biopsies as most mucosal biopsies are limited to superficial portions of mucosa and cannot reach the deeper vessels (1,4,9).

There are no internationally accepted standardized treatments for GI involvement in vasculitis. Therapies reported include steroids, Sulfasalazine, 5-ASA, Anti-TNF, cyclophosphamide, and/or IVIG with treatments of plasmapheresis (1-4,9).

Treatments for IBD include steroid therapy, antitumor necrosis factor (anti-TNF) therapy and potentially biologics. Patients who receive anti-TNF therapy for Crohn's disease are susceptible for TB reactivation or acquisition with potential for dissemination (7). To reduce latent TB reactivation, patients should receive Rifampin/Isoniazid for 3 months prior to commencement of anti-TNF therapy, or if they develop TB during treatment, be given standard antituberculosis therapy (6). With all three differentials of IBD, ITB, and Vasculitis, surgical management is conservative, with perforation being managed by resection and end-to-end anastomosis. Obstruction can be managed by strictureplasty or, in severe cases, by resection. Obstruction and fistulae may respond to purely medical management (6,7).

Conclusion

- It is imperative to take a very detailed history and physical exam and keep a high index of suspicion for vasculitis related GI disease.
- GI related disease with vasculitis is rare but can be life threatening if missed and the diagnosis has been historically difficult to establish per several reviews and case reports (1,3,4,9).
- This carries even higher importance in areas where TB and certain vasculitis are endemic as therapy differs substantially and may lead to disastrous outcomes if not correctly identified.
- Providing awareness of this uncommon pathology may help eliminate delay of diagnosis as rapid medical therapy appears may help prevent complications requiring surgical intervention.

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