Granulomatous Gastritis and *Helicobacter Pylori* Infection

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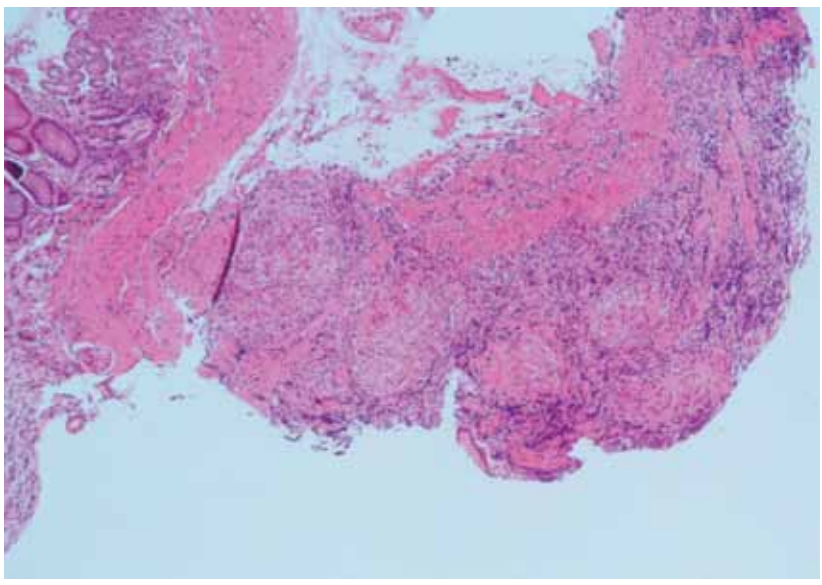
Granulomatous gastritis is an uncommon disease characterized by the presence of granulomas within the gastric mucosa [1,2]. Gastric granulomas may be associated with several types of infections, inflammatory and neoplastic diseases; however, Crohn's disease, sarcoidosis and *Helicobacter pylori* infection should be considered first when dealing with these incidental histological findings in a western population [1-3]. We describe a case of GG without any clear etiology after a comprehensive diagnostic workup that resolved completely with *H. pylori* eradication therapy.

PATIENT DESCRIPTION

A 75 year old Sephardic* Jewish woman with no significant past medical history or prior chronic use of medications was referred to our gastroenterology department for esophagastroduodenoscopy due to a 3 month history of dyspepsia without any associated significant clinical symptoms or other features worthy of note. At the time of her evaluation in the gastroenterology clinic she appeared well and not in distress. Physical examination was normal. EGD showed mild erythema and scarce tiny gastric erosions located in the antrum and lower gastric body. Antral biopsy specimens revealed multiple non-necrotizing (sarcoid-like) granulomas [Figure] including multinucleated giant cells and histiocytes associated with moderate chronic inflammation. *Helicobacter pylori* was identified by rapid urease test and histology. Stains for acid-fast bacilli and fungi were negative and there was no evidence of particulate foreign material. A diagnosis of granulomatous gastritis was established. A subsequent extensive workup included: enhanced thoracic and abdominal computed tomography, CT enterography, gallium-67 scanning, protein electrophoresis and immunoelectrophoresis, and measurements of angiotensin-converting enzyme and calcium, C3-C4, anti-mitochondrial antibodies, perinuclear anti-neutrophil cytoplasmic antibodies, anti-Saccharomyces cerevisiae antibodies, C-reactive protein and erythrocyte sedimentation rate. Essentially, all the results were negative or within the normal reference ranges. Workup for infectious agents including tuberculosis, Brucella syphilis, histoplasma, Q fever, cytomegalovirus, Schistosoma and human immunodeficiency virus was also negative. Of note, enteroscopy with duodenal biopsies as well as colonoscopy with ileoscopy, and multiple biopsies of the terminal ileum and colon, including rectum, were unremarkable.

Given the findings of non-caseating gastric granulomas against the background of *H. pylori* chronic active gastritis in the absence of any other clear inflammatory, infectious or malignant etiology, our working diagnosis was GG intrinsi-

Antral biopsy specimens revealed multiple non-necrotizing (sarcoid-like) granulomas



*Of Middle Eastern or North African origin
GG = granulomatous gastritis
EGD = esophagastroduodenoscopy

cally associated with *H. pylori* infection. Consequently, the patient was treated with standard "triple therapy" (esomeprazole, clarithromycin and amoxicillin) for 2 weeks. Eventually, she became asymptomatic and a second gastroscopy performed 3 months after the original diagnosis showed a marked reduction and fading of the antral granulomas. Gastric histology and rapid urease test were negative for *H. pylori* and the urea breath test corroborated the successful *H. pylori* eradication. Furthermore, a follow-up gastroscopy with multiple gastric biopsies performed 9 months later revealed neither inflammation nor granulomas.

COMMENT

Granulomatous gastritis is a rare entity occurring in 0.08% to 0.35% of all gastritis biopsies and gastric surgical resection specimens [1,2]. The etiological diagnosis of GG can be challenging since it could be due to any of a long list of non-infectious and infectious disorders including Crohn's disease, sarcoidosis, underlying malignancy, vasculitis, foreign bodies, tuberculosis, histoplasmosis, and syphilis among others [1,2]. There have been some reports in the literature pointing to a potential link between *H. pylori infection* and GG [2-4]. We believe our case strongly supports this intriguing association, based on the complete resolution of the symptoms and the histological findings after the *H. pylori* eradication therapy. Accordingly, while GG is related to a conundrum of diseases, it might be worthwhile looking for and treating any *H. pylori* infection after ruling out other main potential treatable medical conditions such as Crohn's disease, sarcoidosis and gastric malignancy [5].

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Capsule

Vitamin D deficiency and risk for rheumatic diseases

The role of vitamin D in situations other than calcium homeostasis and bone health has become topical. It is apparent that vitamin D has significant effects on the immune system and as such may contribute to the pathogenesis of autoimmune disease. Gatenby examines the evidence to date that vitamin D has a role in immune-mediated rheumatic disorders. Low vitamin D status is reported in many inflammatory rheumatic conditions. In some this extends to an association with disease activity. Vitamin D acts on a number of cells involved in both innate and acquired immunity, biasing the adaptive immune system away from Th17 and Th1 towards Th2 and Tregs. Deficiency, accordingly, could encourage autoimmunity. Direct evidence for this plausible mechanism in specific diseases remains to be demonstrated. To date, there is a dearth of controlled trials of vitamin D in prophylaxis or therapy. Vitamin D deficiency may well be an important factor in autoimmune rheumatic disease, including initial disease development and worsening the disease once present. This is testable and there is a pressing need for therapeutic studies.

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Capsule

In vitro assessment of mesenchymal stem cells immunosuppressive potential in multiple sclerosis patients

Mesenchymal stem cells (MSC) are promising for multiple sclerosis (MS) treatment. However, clinical results remain controversial, and no criteria are available for predicting the efficiency of MSC therapy. Using an in vitro model of lymphocytes and MSC co-cultivation, Zafranskaya et al. revealed that the Index of MSC Suppression of myelin-induced memory T cells proliferation was stronger than that of PHA-stimulated proliferation and inversely correlated with patients' EDSS score. In vitro expression of CD119 (IFNGR1) in mitogen/myelin-stimulated T cells increased in the presence of MSC, being inversely correlated with T lymphocyte proliferation. The Index of MSC Suppression and CD119 expression in T lymphocytes may be useful when assessing MSC immunosuppressive potential in MS patients.

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