CASE

A 50-year-old Filipino woman, at average risk for colorectal cancer, presented for screening colonoscopy. Her history revealed recurrent, generalized abdominal pain and diarrhea since adolescence. She emigrated from Mindanao, Philippines 27 years prior and had 4 trips to that area over the past 10 years. Physical examination was unremarkable. Recent hematology testing revealed findings consistent with iron deficiency anemia and fecal occult blood testing was negative. All other laboratory values were within normal limits.

Colonoscopy demonstrated normal appearing mucosa with two small, 5mm, sessile polyps in the proximal colon, both of which were excised. Microscopic examination of the ascending colon polyp revealed multiple oval, calcified cyst-like structures with partially intact walls embedded within the colonic submucosa with nearby multinucleated giant cells and eosinophils, consistent with Schistosoma eggs (Figures A and B). No ova or parasites were seen on stool studies following colonoscopy. The patient was treated with praziquantel, and within 6 weeks her symptoms and laboratory abnormalities improved.

Discussion

Schistosomes are digenetic blood-dwelling flukes with a definitive mammalian host and an intermediate snail host. The adult worms of the main intestinal species are found in pairs in the mesenteric vessels where they lay their eggs.\(^1\) Intestinal schistosomiasis occurs when ova deposit in the submucosa producing a granulomatous reaction. Mucosal edema, hemorrhage and ulceration may occur in its earlier stages, while thickened bowel wall, polyps or colonic stricture can be detected in chronic cases.\(^2\) The passage of ova in stool is frequent in early stages but infrequent and scanty when the disease becomes chronic.\(^2\)

Schistosomiasis is a serious endemic disease of the tropics and subtropics affecting over 200 million people world-wide. Two species of schistosomes commonly produce intestinal disease: S. mansoni and S. japonicum.\(^3\) Although eradicated from many areas in Asia, Schistosomiasis japonica continues to remain a major public health problem in the Philippines

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affecting 10 out of 16 regions with 6.7 million people at risk. Evidence from cross sectional studies and randomized control trials supports a relation between schistosomiasis and anemia, but the exact mechanism is unclear. Egg translocation across the intestinal wall may result in extracorporeal blood loss or the anemia may be a result of cytokine mediated dyserythropoiesis. Recent studies have found that the prevalence of iron deficient anemia, as seen in our patient, had a greater prevalence amongst those with high intensity infections than those with low-intensity infections as defined by egg burden in stool samples.

Schistosoma japonicum infection is considered a significant risk factor for colon cancer in Asia. Ecologic studies performed in the eastern provinces of China showed a strong prevalence of schistosomiasis japonica and colon cancer incidence and mortality, although a causative relationship is still controversial. Since schistosomiasis is known to cause chronic inflammation and epithelial proliferation, it may be postulated that this reaction sets the stage for the dysplasia carcinoma sequence to occur.

CONCLUSION

This case demonstrates how colonoscopy contributes to diagnosing chronic intestinal schistosomiasis where more conservative laboratory testing, such as stool cultures, may fail to detect disease due to the low amount of ova shedding. Additionally, based on current literature, it can be postulated that through eradication of Schistosomiasis, one may effectively treat iron deficient anemia as well as reduce risk of future development of colorectal cancer in this patient population.

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References