they do not require complete resection. However, colorectal hemangiomas should not be unroofed because this will result in profuse bleeding. Therefore, careful observation and correct endoscopic diagnosis are indispensable; the typical color of a hemangioma is dark blue, dark red, or port wine, which can be easily distinguished from the translucent bluish color of lymphangiomas.

During snaring of a lymphangioma, lymphatic fluid flows out, a further confirmation of the diagnosis. Furthermore, the upper half of the tumor can be easily distinguished from the translucent bluish color of lymphangiomas. Careful observation and correct endoscopic diagnosis are indispensable; the typical color of a hemangioma may otherwise cause intussusception or other complications.


Whipple’s disease, a rare infection by Tropheryma whippelii, usually involves the mucosa of the small intestine and leads to malabsorption and weight loss. This bacterial infection can also affect other sites, the most frequent being the central nervous system, heart, joints, and the mesenteric lymph nodes. However, esophageal or colonic involvement is unusual in Whipple’s disease.

CASE REPORT

We report the case of a 50-year-old man with a history of frequent episodes of diarrhea and complaints of dyspepsia and flatulence of several months duration. He had a 30-pound weight loss during the last year. He denied any history of fever, arthralgias, or neurologic symptoms. Physical examination was essentially unremarkable except for the weight loss. Laboratory evaluation revealed only a normochromic normocytic anemia. An HIV ELISA test was negative. An abdominal CT scan showed enlarged retroperitoneal and mesenteric lymph nodes. Upper gastrointestinal series and single contrast barium enema were within normal limits.
Upper endoscopy was performed and revealed multiple pale, whitish, smooth, plaque-like nodules throughout the pharynx, esophagus (Fig. 1), and duodenum. Biopsy specimens were taken from the esophagus and duodenum. Duodenal mucosal biopsies showed widening of the villi with distention of the lamina propria by pale staining, foamy macrophages (Fig. 2). Dilated lacteals were noted. The histiocytes were strongly periodic acid Schiff (PAS) positive. Special stain for acid fast bacilli was negative.

Coarsely granular PAS-positive macrophages similar to those in the duodenal mucosa were identified infiltrating the esophageal mucosa (Fig. 3). The esophageal squamous epithelium was not inflamed. No metaplastic changes were noted.

Colonoscopy revealed abundant, prominent, pale, smooth nodules throughout the entire colon (Fig. 4). Biopsies revealed foamy PAS-positive histiocytes in both the mucosa and submucosa. Within the mucosa, the infiltrating macrophages caused distention of the lamina propria and separation of the colonic crypts (Fig. 5).

Electron microscopy was performed on biopsy specimens obtained from the duodenum and the colon. Examination of both the colonic and duodenal mucosa showed abundant 1.5 μ long, rod shaped bacilli. The bacilli were identified both extracellularly and within intracytoplasmic lysosomal vacuoles in the lamina propria macrophages (Fig. 6).

A diagnosis of Whipple’s disease was made and the patient was treated with oral tetracycline, 500 mg four times a day. The patient responded almost immediately with a rapid clinical remission. He gained weight and in a few months was asymptomatic. Five months after the patient was started on antibiotic treatment, repeat endoscopic examination revealed few duodenal and colonic nodules. No esophageal endoscopic abnormalities were
identified. Biopsy specimens were obtained. The duodenal mucosa disclosed a few, scattered, nongranular, weakly PAS-positive macrophages within the lamina propria. Mucosal biopsies of the esophagus and colon showed no significant pathologic changes. The patient received treatment with tetracycline for a full year. Final panendoscopic examination with random biopsies was performed at the conclusion of antibiotic therapy. No gross or microscopic abnormalities were identified. The patient has remained well for 30 months since his final endoscopy.

DISCUSSION

Whipple's disease is a multisystemic infectious disease usually affecting middle-aged patients. The disease characteristically affects the small intestine and presents with malabsorption and weight loss. The histopathologic finding of blunted small intestinal villi with dilated lacteals and a lamina propria distended by foamy PAS-positive (acid fast-negative) macrophages is pathognomonic. Whipple's disease very rarely affects the mucosa of the esophagus and colon. All reports of Whipple's disease with esophageal and/or colonic involvement have been autopsy cases. Microscopic examination of the esophageal and colonic mucosa from such patients reveal occasional PAS-positive macrophages. In only one of the autopsied cases were gross mucosal alterations identified outside the small intestine. In this particular case, the cecum and proximal portion of the ascending colon were noted to be grossly abnormal but the degree was not documented in the report. There are no reports in which the involvement of these organs was the presenting manifestation. Caution should be exercised in the diagnosis of colonic Whipple's disease because PAS-positive muciphages are commonly found in the normal rectal mucosa and may be confused with the macrophages found in Whipple's disease.

We believe that our case report represents the first premortem documentation of Whipple's disease with prominent involvement of the esophagus and colon. Our patient had diffuse gross pathologic findings throughout the gastrointestinal tract with involvement of the pharynx, esophagus, duodenum, and colon. The endoscopic features in the esophagus and colon were similar to those previously described in the duodenum and consisted of pale, plaque-like nodules that corresponded histologically to the presence of abundant PAS-positive macrophages. The characteristic foamy histiocytes were identified both within the mucosa and the submucosa of the colon. Some areas of colonic involvement were focally confined to the submucosa. This somewhat unusual submucosal distribution of histiocytes has been reported in the small intestine only once, and the findings were attributed to the effects of prior antimicrobial therapy.

As has been previously described in the duodenal mucosa, the esophageal and colonic lesions in our patient rapidly decreased in number and finally disappeared after institution of antibiotic therapy. However, relapses may be encountered, especially in cases with central nervous system involvement. Therefore, several authors recommend prolonged therapy with an antibiotic that will cross the blood brain barrier, such as trimethoprim-sulfamethoxazole. Occasionally, scattered,
weakly PAS-positive macrophages may persist for several months after normalization of the duodenal mucosal architecture. This is not considered a criteria for modification of antibiotic therapy.

ACKNOWLEDGMENT

We thank Dr. William O. Dobbins III for his careful review and valuable criticism of the manuscript.

REFERENCES


Fatal hypocalcemic, hyperphosphatemic, metabolic acidosis following sequential sodium phosphate-based enema administration

David E. Pitcher, MD
R. Stuart Ford, MD
M. Timothy Nelson, MD
Walter E. Dickinson, MD

Sodium phosphate–based enema preparations are commonly used for bowel preparation for flexible sigmoidoscopy and before large bowel surgical procedures. In addition, these enema preparations are readily available to patients without prescription for relief of constipation. Although generally safe and well tolerated in adults, serious metabolic complications and fatalities have been described as rare consequences of sodium phosphate enema administration in infants and small children. Given the rare nature of reported complications from sodium phosphate enema preparations in adults, few clinicians are fully aware of the potential metabolic derangements resulting from overdosing or prolonged intraluminal retention of the enema solution. Previously described metabolic derangements resulting from sodium phosphate enema overdose or retention include hypernatremia, hypocalcemia, hyperphosphatemia, and metabolic acidosis. This case report describes the death of an elderly patient following iatrogenic sodium phosphate enema overdose.

CASE REPORT

A 64-year-old man with schizophrenia, but in otherwise general good health, had undergone an uneventful abdominoperineal resection for a T3N2M0 (Dukes’ C2) adenocarcinoma of the rectum 5 cm from the anal verge. Four weeks after surgery, the patient was noted to have progressive stenosis of his end sigmoid colostomy at the skin level and mild obstructive symptoms of intermittent bloating without obstipation or constipation. Attempts at stomal revision with simple dilation and V-plasty under local anesthesia failed, and the patient was admitted to the surgical service for formal colostomy revision. The evening before surgery, a standard oral bowel preparation with 4 L of polyethylene glycol solution was ordered along with oral neomycin/erythromycin base. The patient also received maintenance intravenous fluids to avoid dehydration. The next morning, it was discovered that the patient had not taken all of the lavage solution, so an order was given for “Fleet’s enemas” through the end colostomy “until clear.” When transport personnel arrived to take the patient to the operating room, he was noted to be ashen and confused and complaining of weakness. His vital signs revealed marked hypotension, with a heart rate of 60 beats/minute, and tachypnea. He was immediately transported to the surgical intensive care unit for further resuscitation and workup.