Erosive Gastritis and Gastrointestinal Bleeding in a Female Runner

Prevention of the Bleeding and Healing of the Gastritis With H_2-Receptor Antagonists

B. T. COOPER, SHIRLEY A. DOUGLAS, L. A. FIRTH, JACQUELINE A. HANNAGAN, and V. S. CHADWICK
Departments of Gastroenterology and Nuclear Medicine, Dunedin Hospital, and Wellcome Medical Research Institute, University of Otago Medical School, Dunedin, New Zealand

A 33-yr-old female runner presented with upper gastrointestinal symptoms and iron deficiency anemia. She was found to have erosive gastritis that was present when she exercised and which was associated with symptoms. Gastrointestinal blood loss during exercise periods was confirmed by measuring fecal blood loss using ^{51}Cr-labeled red cells. Symptoms, gastritis, and blood loss disappeared with cessation of running or with H_2-receptor antagonist therapy.

Many athletes involved in intense physical activity, especially long distance running, have a low hemoglobin and low hematocrit (1–5). This sports "anemia" is generally considered to be a physiologic response to exercise caused by expansion of the plasma volume (5–7). However, other factors such as hemolysis (3,4) or occult urinary tract (8) or gastrointestinal tract (9–11) bleeding may contribute to this low hemoglobin. Sports "anemia" is usually mild and asymptomatic, but in some runners symptomatic anemia and overt urinary tract (12) or gastrointestinal tract bleeding (9,13–15) may occur. The source of occult gastrointestinal hemorrhage in most reports is unknown, although 2 cases of bleeding gastric erosions leading to overt gastrointestinal hemorrhage have been reported in runners (15). Even in these 2 cases, however, the relationship of the bleeding and erosions to exercise was anecdotal.

In this paper we report a detailed study confirming that erosive gastritis, gastrointestinal bleeding, and iron deficiency anemia were directly related to running in a 33-yr-old female athlete.

Received November 25, 1986. Accepted December 1, 1986.

Address requests for reprints to: Dr. B. T. Cooper, University Department of Medicine, Bristol Royal Infirmary, Bristol, BS2, 8HW, United Kingdom.

The authors thank A. Wilson and Dr. C. Lovell-Smith for fecal occult blood testing.

© 1987 by the American Gastroenterological Association
0016–5085/87/$3.50

Case Report

A 33-yr-old housewife presented to the Gastroenterology Unit in September 1985 with a 3-yr history of dyspepsia, epigastric pain, tiredness, dizziness, and recurring iron deficiency anemia. There was no relevant previous medical history. Over the last 7 yr, she had taken up serious running and ran most days of the week up to 10 miles a day. She regularly competed in half-marathon events. Over the last 3 yr she had been increasingly troubled with dyspepsia and severe epigastric pain. The pain was often precipitated or made worse by running and on one occasion was severe enough to cause her to drop out of a half-marathon event. She noticed that if she stopped running for a period of time, her symptoms settled. She also complained of weakness, tiredness, and dizziness and in October 1983 was found to have a hemoglobin of 8.6 g%. Since then, she had courses of iron but regularly had symptomatic anemia. At attendance at the Clinic she was taking oral iron but no other medication. She had regular menstrual periods with no excessive loss. There was no relevant family history and she was a nonsmoker.

On examination, no abnormal features were seen and perianal inspection, rectal examination, and sigmoidoscopy were normal. In September 1985, her hemoglobin was 12.7 g% with a mean corpuscular hemoglobin of 29 pg but her blood film showed anisocytosis and poikilocytosis. The serum iron level was depressed at 7.3 μmol/L and serum ferritin was low at 11 ng/ml (normal, 8–100). The following blood tests were normal: mean corpuscular volume, packed cell volume, white cell count, platelet count, reticulocyte count, serum vitamin B_{12}, red cell folate, prothrombin time, plasma urea and electrolyes, and serum proteins. Liver function tests were also normal. Her urine contained no red cells or hemosiderin. Fecal occult

blood tests were negative on three occasions. A barium enema, small bowel meal, and a small bowel biopsy were normal. An upper gastrointestinal endoscopy showed marked erosive gastritis along the greater curve and posterior wall of the distal body of the stomach.

Methods

The subject gave informed written consent for three studies to determine the relationship of the erosive gastritis to running, to document gastrointestinal blood loss in relation to running, and to study the effects of H_2-blockers on the erosions and on any gastrointestinal blood loss.

Study 1

The aim of this study was to determine whether (a) the erosive gastritis was related to running, (b) running caused positive fecal occult blood tests, and (c) the erosions would heal and remain healed on the H_2-receptor antagonist cimetidine.

After the initial diagnostic endoscopy, the patient stopped oral iron and refrained from running for 4 wk. She then had a second endoscopy after which she resumed exercise, running 6–7 miles/day for a second 4-wk period. She had a third endoscopy at the end of that time. During the rest and exercise periods, she collected stool samples for occult blood testing using "Hematest" (Ames Laboratories, Elkhart, Ind.). After a 4-wk break in the study during which she continued her running, she started on cimetidine, 400 mg b.i.d., which she continued for 4 wk and then had a fourth endoscopy. At 4-wk intervals she had a full blood count and serum iron and ferritin measurements.

Study 2

The aim of this study was to document fecal occult blood loss during exercise by measuring fecal loss of ^{51}Cr-labeled autologous red cells (16). The study commenced 3 wk after stopping cimetidine at the end of study 1. During this time, the patient did not run. After her menstrual period had stopped, she was injected with ^{51}Cr-labeled autologous red cells and she rested for a further 5 days. For the next 6 days, she ran 10 miles/day. At the end of this exercise period she underwent endoscopy. During the 11-day study period, all stool passed was collected and tested with Hematest. Each day's collection and a daily blood sample were counted for radioactivity and daily fecal blood loss was calculated (17). Blood loss of ≤2 ml was considered normal (16,17).

Study 3

The aim of this study was to document the prevention of fecal blood loss with an H_2-blocker. Two months after the start of study 2 and at the finish of her menstrual period, she was again injected with ^{51}Cr-labeled autologous red cells. The study continued for 41 days during which she ran 7–10 miles/day, scored her abdominal pain daily on an analog scale of 0–4, and collected all her stools. For the first 11 days she took an H_2-blocker. Initially she took cimetidine, 400 mg b.i.d., but on the second day she had discomfort which she blamed on the cimetidine. She was changed to ranitidine, 150 mg b.i.d., which she continued for 9 days. After 18 days without drug therapy, ranitidine, 150 mg b.i.d., was restarted for the final 12 days. Each day's stool collection and a daily blood sample were counted for radioactivity and daily fecal blood loss was calculated (17).

Results

Study 1

The results are summarized in Table 1. During the 4-wk rest period, symptoms disappeared, erosive gastritis healed, and serum iron improved. During the first exercise period, symptoms returned, erosive gastritis reappeared, and hemoglobin and serum iron fell. Fecal occult blood tests remained negative throughout. During the final phase of the study, symptoms again disappeared, erosions healed, and serum iron and ferritin rose on cimetidine therapy despite continued running.

Study 2

The results are presented in Table 2. On the third, fourth, fifth, and sixth days of exercise (study days 8–11), the patient had significant gastrointestinal blood loss. During the 6-day exercise period, her symptoms returned and at the end of 6 days, endos-

Table 1. Results of Study 1[a]

	Weeks				
	0	4	8	12	16
Symptoms	Yes	No	Yes	Yes	No
Hemoglobin (g/100 ml)	12.7	12.6	10.8	9.9	9.9
Serum iron (μmol/L)	7.3	23.8	9	1.5	5
Serum ferritin (ng/ml)	11	—	—	5	9
Fecal occult blood ("Hematest")	Negative	Negative	Negative	—	—
Number of fecal specimens tested	3	17	12	—	—
Endoscopy	Erosive gastritis	Normal	Erosive gastritis	—	Normal

[a] Weeks 0–4 = rest; weeks 5–12 = exercise; weeks 13–16 = exercise + cimetidine.

Download English Version:

https://daneshyari.com/en/article/3300669

Download Persian Version:

https://daneshyari.com/article/3300669

Daneshyari.com