

LETTER-TO-THE-EDITOR

Coffee Phagia and Iron-deficiency Anaemia: A Possible Association with *Helicobacter pylori*

Sir,

Iron deficiency is the most common cause of anaemia worldwide, and it is more prevalent in developing countries (1). Many signs and symptoms are related to iron deficiency, pica being one of the most intriguing and yet unexplained. The causes and risk factors of pica are not well-established. We report the case of a woman with iron-deficiency anaemia, who craved for ground coffee powder. We explored its association with *Helicobacter pylori*.

A 36-year old woman with complaints of dyspnea, fatigue, and exertional dyspnea reported no chest pain, orthopnea, nocturnal dyspnea, vaginal bleeding, haematemesis, melena, or haematochezia. The patient had recently noted a craving for coffee powder and had been ingesting 5-10 times daily.

Physical examination revealed a blood pressure of 140/90 mm of Hg, a regular heart rate of 98 beats per minute, a respiration rate of 18 breaths per minute, and an axillary temperature of 36 °C. She was alert but oriented; conjunctival pallor was noted.

The chest was clear to auscultation, and heart sounds were found to be normal. The abdomen was soft, nontender with active bowel sounds, and no appreciable organomegaly. Occult blood was not found on the examination of stool. Laboratory studies revealed a WBC count of 9000/mm³ (3), haemoglobin 10.1 g/dL, haematocrit 28.5%, and a platelet count of 160.000/mm³ (3). The erythrocyte sedimentation rate was elevated at 37 mm/h. Blood urea nitrogen and creatinine were 22 mg/dL and 1.2 mg/dL respectively. Liver function tests revealed no abnormality. The lactate dehydrogenase (LDH) level was 500 IU/L, i.e. at the upper side of the

normal range (normal range 230-460 IU/L). The coagulation profile was normal. The peripheral blood smear revealed microcytic, hypochromic erythrocytes and normal distribution of platelets. The level of serum iron was 8 ng/dL (normal range 25-170 ng/dL), and total iron-binding capacity was 498 ng/dL (normal range 200-450 ng/dL).

Subsequently, the patient underwent upper gastrointestinal endoscopy which revealed antral gastritis. The biopsy taken from antral region was evaluated for rapid urease test (CLO-test) and histological examination. Gastric mucosa was found to be infiltrated by chronic and acute inflammatory cells and sections stained with Giemsa which revealed the presence of a large number of spiral organisms, such as *H. pylori*. A barium-contrast small-bowel study demonstrated no abnormality. No lymphadenopathy was found. The patient was commenced to receive omeprazole (20 mg twice daily), amoxicillin (1,000 mg twice daily), and clarithromycin (500 mg twice daily) for 14 days. Approximately, eight weeks later, the patient felt well and no longer craved for coffee powder. Status of *H. pylori* was reassessed with the *Helicobacter pylori* stool antigen (HpSA) test because she did not accept endoscopic examination. The stool test was negative for *H. pylori*. Repeated testing revealed a haemoglobin level of 12.7 g/dL, haematocrit 36%, and mean corpuscular volume of 78 fl without iron replacement.

Iron-deficiency anaemia is the most common form of anaemia. It is commonly believed to be the result of gastrointestinal blood loss in men and post-menopausal women. Even after the gastrointestinal tract is examined to identify a source of bleeding, about 30% of patients remain undiagnosed (2).

However, iron-deficiency anaemia is the result of an imbalance between iron loss and absorption. Evaluation of our patient revealed no abnormality for blood loss. She had excessive vaginal bleeding at the first admission to our polyclinic one year ago, but she now had normal menses. So, we had to consider other causes for iron deficiency.

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Infection with *H. pylori* occurs worldwide, and its overall prevalence is strongly correlated with socioeconomic conditions. Its prevalence among middle-aged adults is over 80% in many developing countries compared to 20-50% in industrialized countries (3). It causes chronic atrophic gastritis, gastric and duodenal ulcer, and gastric cancer (2).

Recent epidemiologic studies have shown a relationship between *H. pylori* infection and iron-deficiency anaemia which were associated with decreased concentration of serum ferritin (4). It has also been reported that lactoferrin level was higher in patients with *H. pylori* than patients without *H. pylori* (5). The exact mechanism of how infection due to *H. pylori* affects the iron metabolism is not clear. *H. pylori* infection is mostly associated with gastric hypoacidity and achlorhydria (6). Gastric hypoacidity may hinder the absorption of non-haem iron (7). A specific protein was also identified on the surface of *H. pylori*, which binds ferritin with high affinity (8).

Pica occurs in up to 58% of patients with iron-deficiency anaemia. Although its aetiology is not known, possible causes have been reported as following: nutritional deficiencies, particularly zinc and iron, psychosocial problems, and specific brain lesions leading to abnormal eating behaviours. However, pica itself causes iron deficiency. Unfortunately, evidence-based studies on aetiology of pica are lacking (9,10). When she came for the first time, she had been checked for means of iron loss, including upper gastrointestinal endoscopy, and her iron loss was blamed to excessive menstrual bleeding. She was given only iron-replacement therapy, and her anaemia showed no improvement according to her file records. Perhaps, she had silent infection due to *H. pylori* at that time.

The patient was admitted for the second time to our outpatient clinic because of craving for coffee powder and dyspepsia. She was diagnosed to have iron-deficiency anaemia and *H. pylori*-associated gastritis. Her history suggested that she did not take coffee or anything that is considered as pica for this time. After eradication of *H. pylori*, her craving for coffee powder disappeared. She has been in good health for two years and has not craved for coffee any more. This disappearance of pica after eradication of *H. pylori* supports the theory that pica could well be a symptom of iron deficiency rather than its cause.

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