Severe Chest Pain due to Gastric Anisakiasis

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We treated two cases of gastric anisakiasis presenting with severe chest pain. In both cases, there was a history of prior ingestion of raw saltwater fish. After endoscopic removal of larvae, the chest pain disappeared and never recurred. Other diseases causing chest pain were ruled out by symptoms, signs, blood tests, electrocardiography, chest radiograph, and ultrasonic examination of the heart and abdomen. Thus the chest pain was considered to be caused by gastric anisakiasis. Gastric anisakiasis should be included in the differential diagnosis of acute chest pain.

(Internal Medicine 36: 28–30, 1997)

Key words: larva, ischemic heart disease, raw fish

Introduction

Anisakiasis is a gastrointestinal infection caused by larvae, mainly of Anisakis species and Pseudoterranova species, found in saltwater fish. Its symptoms, including abdominal pain, nausea, and vomiting, occur usually within 48 hours after ingestion of raw sedwater fish, and are caused by penetration of larvae into the gastrointestinal wall (1). Consideration of this disease based on a history of prior ingestion of raw fish is important for the diagnosis, and a definite diagnosis of gastric anisakiasis is easily made by endoscopic examination. Although usually no specific treatment is needed, relief of the symptoms is hastened by endoscopic removal of larvae (1). Gastric irritation, such as peptic ulcer disease, may be included in the causes of chest pain or discomfort (2), but gastric anisakiasis presenting with chest pain has been reported in only a few cases (3, 4), to our knowledge. We treated two cases of gastric anisakiasis that presented with severe chest pain.

Case Report

Case 1

A 62-year-old female visited us at night, October 1, 1995, because of retrosternal pain. She had taken an anti-hypertensive agent from our hospital for several years. She had been well until 3 hours before the visit, when she gradually felt general malaise and dizziness. Then she felt acute non-pleuritic retrosternal sticking pain and dyspnea for about ten minutes, and visited us. The pain subsequently became mild and vague. She denied abdominal pain.

On physical examination, blood pressure was 170/110 mmHg, and pulse was 78. Palpation of the chest wall was normal. Heart and respiratory sounds were normal. There was mild epigastric tenderness. Electrocardiographic findings presented 0.05 mV depression of ST segment on V3-6 precordial leads with low T wave; these were the same findings as those of the previous recording. Chest radiograph was normal except for mild cardiomegaly. Blood check was not done. As the possibility of angina pectoris was not ruled out, she went home with long-acting tablets of isosorbide dinitrate.

Five days later, when she still felt mild chest discomfort, she re-visited our hospital. Physical examination revealed no abnormality except for mild epigastric tenderness. White blood cell count was 4,600/μl with 6% eosinophils. Endoscopic examination revealed gastric anisakiasis (Fig. 1A), and two live larvae penetrating into the upper portion of the body of the stomach were removed. In the body of the stomach, there were several spotted erosive lesions, one of which was just below the gastroesophageal junction (Fig. 1B). Esophageal mucosa appeared normal. She remembered that she had eaten raw trout about 6 hours before the onset of the chest pain. On the same day, ultrasonic examination was done mainly for detecting biliary and aortic diseases, and was normal. In a few days, the chest discomfort completely resolved. A few days later, a treadmill test was also performed, and was normal. Such an episode has not recurred during a 5-month follow-up period.

Case 2

A 38-year-old male was transferred to our hospital by ambulance on February 26th, 1992. He had been diagnosed as having diabetes mellitus and peptic ulcer disease for several years. He had been well until 2 hours before the arrival, when
Figure 1. A) Two live larvae (arrow) were found penetrating the upper body of the stomach. B) There were several spotted erosive lesions in the body, one (arrow) of which was just below the gastroesophageal junction.

he became acutely ill and felt the sensation of anterior chest constriction for thirty minutes. This pain was not pleuritic. This sensation of chest constriction became dull and vague, and persisted. Just after his arrival, he felt epigastric discomfort.

On physical examination, blood pressure was 120/70 mmHg, and pulse was 78. Palpation of the chest wall was normal. Heart and respiratory sounds were normal. There was mild epigastric tenderness. Electrocardiography was normal. Laboratory data revealed a white blood cell count of 6,400/μl. Hemogram was not examined. Chest radiography was normal. He was admitted to our intensive care unit, and electrocardiographic monitoring was begun. H2-blocker was parenterally administered. Serial blood tests revealed a normal level of creatine phosphokinase.

On the second hospital day, endoscopic examination revealed gastric anisakiasis and healing ulcer. One live larva was found to penetrate into the gastroesophageal junction (Fig. 2), and was removed. Esophageal mucosa appeared normal. He remembered that he had eaten raw cod about 2 hours before the onset of chest pain. The chest and epigastric discomfort resolved in two days. A few days later, ultrasonic examination of the abdomen and stress electrocardiogram test were negative. There has been no recurrence during the 4-year follow-up period.

Discussion

Gastric anisakiasis, which occurs soon after ingestion of raw saltwater fish, often causes acute and intense abdominal cramps, followed by nausea, vomiting, and continuous or intermittent abdominal discomfort. The initial abdominal cramp is said to be caused by initial invasion of larvae into the gastric wall. Relief of symptoms is hastened by removal of larvae (1). In our cases, sudden onset of maximally severe chest pain occurred soon after ingestion of raw saltwater fish, and was followed by vague chest discomfort. The pain was not pleuritic. On physical examination, palpation and auscultation of the chest were normal. The only positive physical finding was epigastric tenderness. With the symptoms and signs, ischemic heart disease, dissection of aorta, esophageal spasm or injury, and gall stone are included in the usual differential diagnosis (2, 5). Myocardial infarction, dissection of aorta, and gall stone were ruled out by blood tests, electrocardiography, chest film, and ultrasonic examination. Chest pain disappeared after removal of larvae, and never recurred. Although vasospastic angina pectoris associated with gastric anisakiasis could not be entirely excluded, the pain occurred only once in both cases. So the acute chest pain was considered to be caused by gastric anisakiasis. Moreover, anisakiasis causing chest pain like ischemic heart disease has been reported in two cases (3, 4). Adding to those, there is one report describing chest disease by anisakiasis, which caused pleural effusion (6).

Although gastric disorders, such as peptic ulcer disease, rarely present chest discomfort, it usually does not have an acute character (2, 5). On the other hand, esophageal disorders, such as esophageal reflux, esophageal spasm, and Mallory-Weiss tears, often present with acute chest pain like that of ischemic heart disease (2, 5). In both of the present cases, there was no esophageal lesion. In case 2, however, the point of invasion of
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Figure 2. A live larva was found penetrating the gastroesophageal junction. That may be associated with the initial symptom by invasion of larva presenting chest pain instead of abdominal cramp. On the other hand, it is not clear why the initial pain was not abdominal pain but chest pain in case 1. One of the spotted erosive lesions, which were probably the marks of bites by larvae, was just below the gastroesophageal junction. That may be associated with the clinical manifestations of case 1. In a previous report (4), the point of invasion of larva was the upper body of the stomach as in our case 1. The authors regarded the chest pain as a referred sensation to the chest. But, it is a problem that the upper portion is not an uncommon point of invasion in gastric anisakiasis (7, 8), which is a very common disease but seldom causes chest pain.

When we encounter gastrointestinal infection of larvae, determination of the species is needed for exact diagnosis. As they were not preserved, unfortunately, the larvae of neither of our cases could be examined. According to the epidemiologic data (1), the larvae of our cases are suspected to be Anisakis species, with Pseudoterranova species second most likely. Anisakiasis is not a rare disease in Japan, where raw fish is commonly eaten. Such eating habit may not be so rare in some other countries as well. Specific symptoms, signs, or laboratory data, such as eosinophilia, for the diagnosis of anisakiasis are usually absent. Consideration of this disease and obtaining a history of ingestion of raw saltwater fish are important for accurate diagnosis (1). Gastric anisakiasis should be included in the differential diagnosis not only of abdominal pain but also of chest pain. A history of ingestion of raw fish should be included in the diagnostic approach of chest pain.

References