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CASE REPORT

Menetrier's disease and differential diagnosis: A case report

Hou-Hong Wang, Can-Can Zhao, Xiao-Lei Wang, Ze-Nong Cheng, Zong-Yu Xie

ORCID number: Hou-Hong Wang 0000-0002-6501-0213; Can-Can Zhao 0000-0002-9267-2984; Xiao-Lei Wang 0000-0003-1564-3490; Ze-Nong Cheng 0000-0001-8770-5975; Zong-Yu Xie 0000-0002-6501-0225.

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Hou-Hong Wang, Department of Surgery, The First Affiliated Hospital of Bengbu Medical College, Bengbu 233004, Anhui Province, China

Can-Can Zhao, Xiao-Lei Wang, Ze-Nong Cheng, Zong-Yu Xie, Department of Radiology, The First Affiliated Hospital of Bengbu Medical College, Bengbu 233004, Anhui Province, China

Ze-Nong Cheng, Department of Pathology, The First Affiliated Hospital of Bengbu Medical College, Bengbu 233004, Anhui Province, China

Corresponding author: Zong-Yu Xie, MD, Chief Doctor, Department of Radiology, The First Affiliated Hospital of Bengbu Medical College, No. 287 Changhuai Road, Bengbu 233004, Anhui Province, China. zongyuxie@sina.com

Abstract

BACKGROUND

Gastric mucosal hypertrophy, also known as Menetrier's disease (MD), is more common in men over 50 years of age, and the cause is unknown. The symptoms of the disease are atypical, mostly accompanied by hypoproteinemia and edema, and sometimes accompanied by symptoms such as epigastric pain, weight loss, and diarrhea. Most experts believe that the site of the disease is mainly located in the fundus of the stomach and the body of the stomach. We found that the site of the disease in this patient involved the antrum of the stomach.

CASE SUMMARY

We introduced the case of a 24-year-old woman who had repeated vomiting for 5 d and was admitted to our hospital. After various examinations such as computed tomography and pathology in our hospital, the final diagnosis of the presented case is MD. The salient feature is that the mucosal folds in the fundus and body of the stomach are huge and present in the shape of gyrus. The greater curvature is more prominent, and there are multiple erosions or ulcers on the folds. The patient did not undergo gastric surgery and did not undergo re-examination. She is drinking Chinese medicine for treatment, and her vomiting and abdominal pain symptoms have improved. This disease is relatively rare in clinical practice, and it is easy to be misdiagnosed as gastric cancer, chronic gastritis and gastric lymphoma, *etc*.

CONCLUSION

MD can occur in the antrum, it is necessary to raise awareness of the disease and reduce misdiagnosis.

Key Words: Gastric mucosa; Hypertrophy; Menetrier's disease; *Helicobacter pylori*; Case

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report

Core Tip: Giant hypertrophy of the gastric mucosa is a proliferative gastric disease that was first discovered by French pathologist Pierre Ménétrier in an autopsy and reported in 1888, and was named Ménétrier disease.

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INTRODUCTION

Giant hypertrophy of the gastric mucosa is a proliferative gastric disease that was first discovered by French pathologist Pierre Ménétrier in an autopsy and reported in 1888, and was named Ménétrier disease (MD). Dr. Ménétrier reported four cases of MD, which were mainly located in the fundus and body of the stomach, two of which were combined with gastric cancer[1-3]. Therefore, he believed that the disease involved the stomach and the fundus of the stomach, and the antrum was preserved. The disease has a certain connection with gastric cancer[4,5]. With the continuous reports of cases, we have found that a few cases can involve the gastric antrum. For example, the lesions in this patient are mainly located in the fundus and body of the stomach, and the antrum is also involved. Pathologically, MD mainly manifests as the proliferation of epithelial cells in the gastric mucosa, the deepening of the gastric pit, the proliferation of mucous cells in the pit, the atrophy of the glands, and the increase in the ratio of gastric pit to glands[6,7].

CASE PRESENTATION

Chief complaints

The patient, female, 24 years old, self-reported that she had repeated vomiting without obvious inducement 5 d ago.

History of present illness

The vomit was food, occasionally bloodshot, accompanied by abdominal pain, and alleviated after eating, no acid reflux, no belching. Gastroscopy in the outside hospital indicated that the Gastric occupying lesions. Laboratory examination: Blood and biochemical test index are close to normal, Tumor indicators and coagulation function are negative; Helicobacter pylori staining was positive.

History of past illness

During the course of the disease, there was no fever, no chills, no diarrhea, no hematemesis, no cough or sputum and good spirits, good diet and sleep, normal stools, and no significant weight loss.

Personal and family history

No history of cancer in individuals and families.

Physical examination

The skin and sclera were not yellowish, the liver and spleen were not touched under the ribs, the abdomen was soft, no tenderness, no rebound pain, and mobile dullness was negative.

Laboratory examinations

The blood analysis revealed that the average hemoglobin was a mild decreased, the test result was 26.7 pg (normal range 27-34 pg), and the reticulocytes were slightly decreased, the test result was 0.023×10^{12}/L (normal range 0.024×10^{12}/L-0.084×10^{12}/L) Prothrombin and partial thromboplastin times were normal. The blood biochemistries, as well as urine analysis were normal. Electrocardiogram, chest X-ray and arterial blood gas were also normal.

Imaging examinations

Plain computed tomography(CT) scan and contrast enhancement CT scan examination showed that the gastric body, stomach fundus, and gastric antrum were diffusely and uniformly thickened, showing gyrus-like changes, focusing on the greater curvature side. After enhancement, it was significantly enhanced. The plain scan, arterial phase and venous phase CT values were about 50 HU, 129 HU, and 113 HU, respectively. The serosal surface of the gastric wall showed smoothness and the density of perigastric fat was clear (Figure 1). Magnetic resonance imaging (MRI) showed that the gastric body, fundus and gastric antrum were diffusely and uniformly thickened, showing slightly longer T1 and T2 signal shadows. DWI showed high signal. The measured ADC value ranged from 1.387×10^{-3} mm^2/s-1.467×10^{-3} mm^2/s. The mucosa showed smoothness (Figure 2).

Gastroscopy and pathological: The cardia extends to the stomach, fundus and antrum, with irregular mucosal bulges, medium texture, poor peristalsis, and narrow gastric cavity. The pylorus is round and can be opened and closed (Figure 3). The diagnosis suggests that the Gastric occupying lesions, possibly gastric cancer. The pathological results showed: Chronic inflammation of the gastric mucosa, hyperplasia and lengthening of the gastric pits, and a small number of glands with mild atypical hyperplasia (Figure 4).

Differential diagnosis

Gastric lymphoma: It is a tumor originating from the lamina propria and submucosal lymphoid tissues of the gastric mucosa. This case is characterized by a small number of CD45-positive lymphocytes scattered among the hyperplastic glands (Figure 5), while the lymphoma is characterized by uniform round tumor cells diffusely distributed under the pathological microscope, so this case does not match.

Gastric cancer: It is a malignant tumor that originates from the gastric mucosa, the structural and cellular atypia of the glands are very obvious, accompanied by obvious invasive growth, so this case does not meet. Figure 5 is an immunohistochemical picture of CK, showing that the hyperplastic glands are arranged regularly.

Gastric polyp: It is a benign tumor derived from gastric epithelium or gastric interstitium. The characteristics of lesion distribution and enhancement characteristics are not consistent with this disease.

Stomach stromal tumor: In gastric stromal tumors, proliferating spindle cells can be seen arranged in bundles and weaves. In this case, only a few proliferating spindle cells are seen between the hyperplastic glands, which is not consistent with this case. The immunohistochemical marker DOG1 was negative (Figure 5), which ruled out the possibility of gastric stromal tumor.

Gastric mucosal prolapse: It refers to the abnormally loose gastric mucosa passing through the pylorus or cardia, protruding into the duodenal ampulla or protruding into the esophagus, which can be distinguished by observation of different positions of upper gastrointestinal angiography.

FINAL DIAGNOSIS

The final diagnosis of the presented case is MD.

TREATMENT

The patient did not undergo gastric surgery and did not undergo re-examination. She

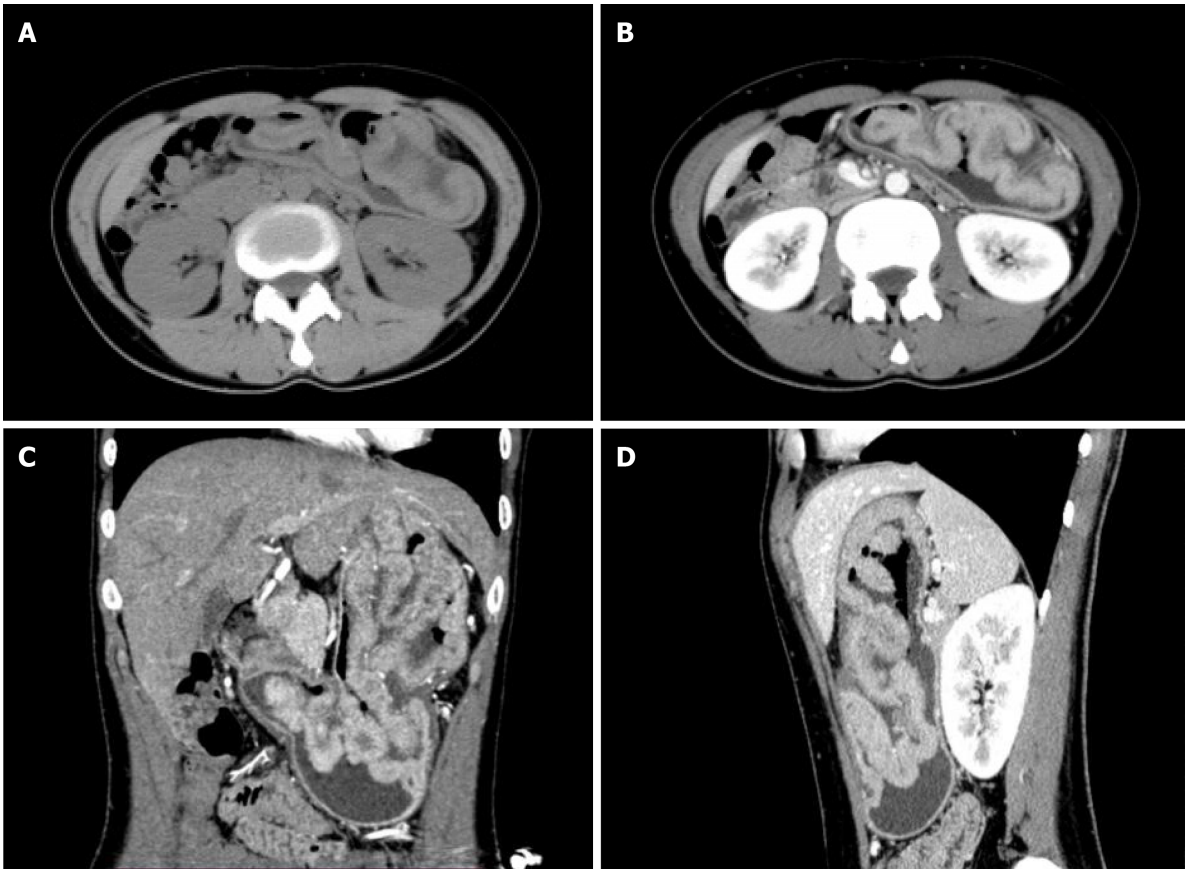

Figure 1 Abdominal computed tomography images. A: Plain scan cross section; B: Enhanced scan cross section; C: Plain scan coronal plane; D: Enhanced scan coronal plane.

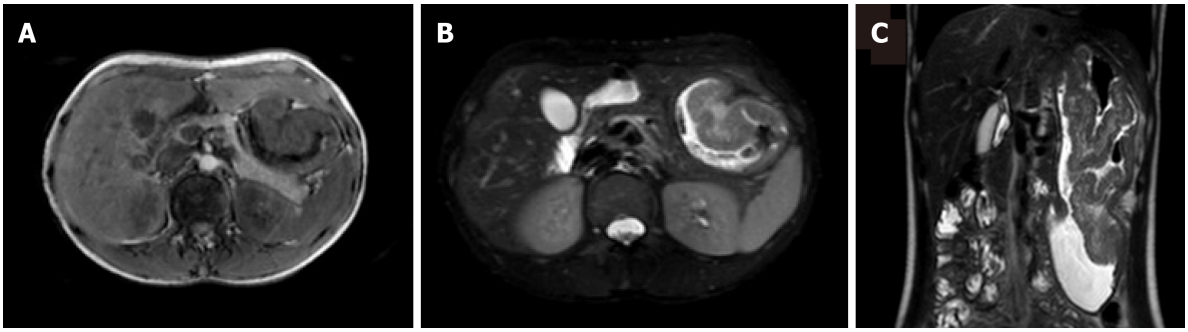

Figure 2 Abdominal magnetic resonance. A: Flat scan cross section; B: Enhanced cross section; C: Enhanced coronal plane.

is still drinking Chinese medicine for treatment, and her vomiting and abdominal pain symptoms have improved.

OUTCOME AND FOLLOW-UP

The weight of the patient increased by 3-4 kg compared to the previous time when he came to the hospital for treatment. Her vomiting symptoms improved significantly, and she would eat less and more meals in her daily life. The patient will have symptoms of vomiting and abdominal pain in a hungry state. However, the patient herself will pay special attention and try not to let herself be hungry. The patient had undergone an operation due to a hernia deformity under the cerebellar tonsil recently. This is also the reason why she did not go for a review recently. I wonder if these two diseases are related?

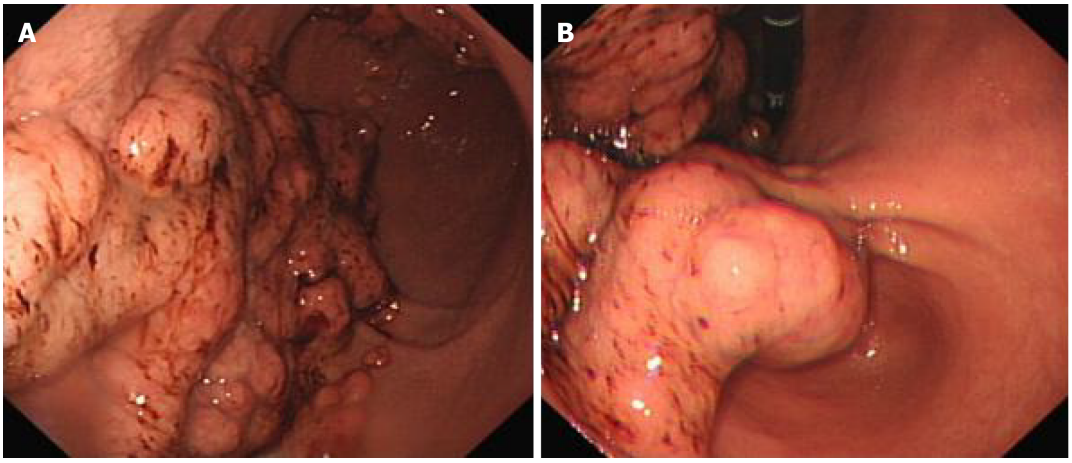

Figure 3 Gastrointestinal endoscopy images. A: Irregular mucosal bulge at the bottom of the stomach; B: Irregular mucosal bulge in gastric antrum.

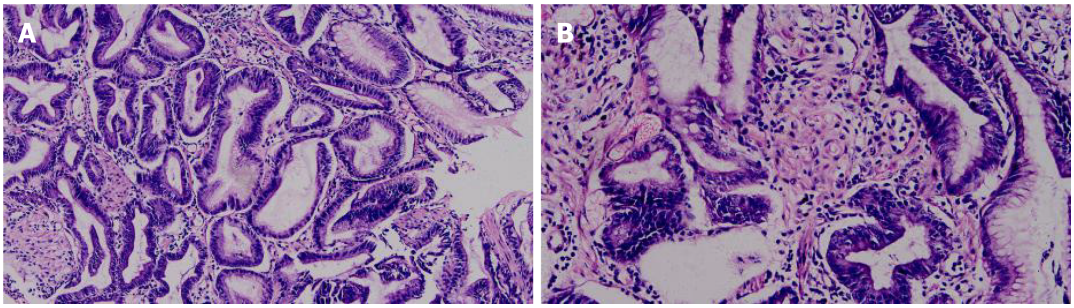

Figure 4 Histological images. A: Hematoxylin-Eosin staining (×100); B: Hematoxylin-Eosin staining (× 400).

DISCUSSION

According to the age of onset, the disease is divided into child type and adult type. The age of onset of child type is mostly under 10 years old, and about 70% is related to cytomegalovirus infection[8-10]. It is acute and self-limited, usually can heal itself. The clinical manifestations of MD in children are usually characterized by acute systemic edema caused by hypoproteinemia, accompanied by gastrointestinal symptoms such as abdominal pain and vomiting. The adult type is mostly 40-60 years old, and Helicobacter pylori infection may be related to adult type MD. Adult-type lesions are characterized by gradual progress and have the potential to become cancerous[11,12]. The main symptoms are abdominal pain, nausea, vomiting, anemia, hypochlorhydria, and edema of surrounding tissues[13,14]. These clinical symptoms are mainly determined by the pathological basis of the disease. A large number of mucous cells proliferate in the gastric pit, leading to increased mucus protein secretion, resulting in hypoalbuminemia and edema in surrounding tissues[15,16]. The glands shrink, and the secretion of principal cells and parietal cells decreases, resulting in a decrease in gastric acid secretion.

Some scholars found that the expression of transforming growth factor (TGFα) and epidermal growth factor receptor (EGFR) in gastric mucosa of MD patients was higher than that of normal controls, and it was overexpressed in gastric mucosa. TGFα transgenic mice showed some characteristics of MD, so they speculated that the pathogenesis of this disease is caused by the overexpression of TGFα and EGFR. In addition, infection, allergies, poisons and other factors may be related to this disease, and cytomegalovirus and Helicobacter pylori may be the triggering factors of this disease. There are also few reports of familial clusters in the literature. The immunohistochemical picture of this case shows the positive expression of ERFR (Figure 5).

The lesions are mainly seen in the body of the stomach and the bottom of the stomach, with the greater curvature as the side, which can be localized or diffuse, and less involve the gastric antrum. An upper gastrointestinal angiography showed thickening of the gastric mucosa, good or poor gastric motility, soft stomach wall, and delayed emptying. CT or MRI showed that the gastric mucosal folds were thickened

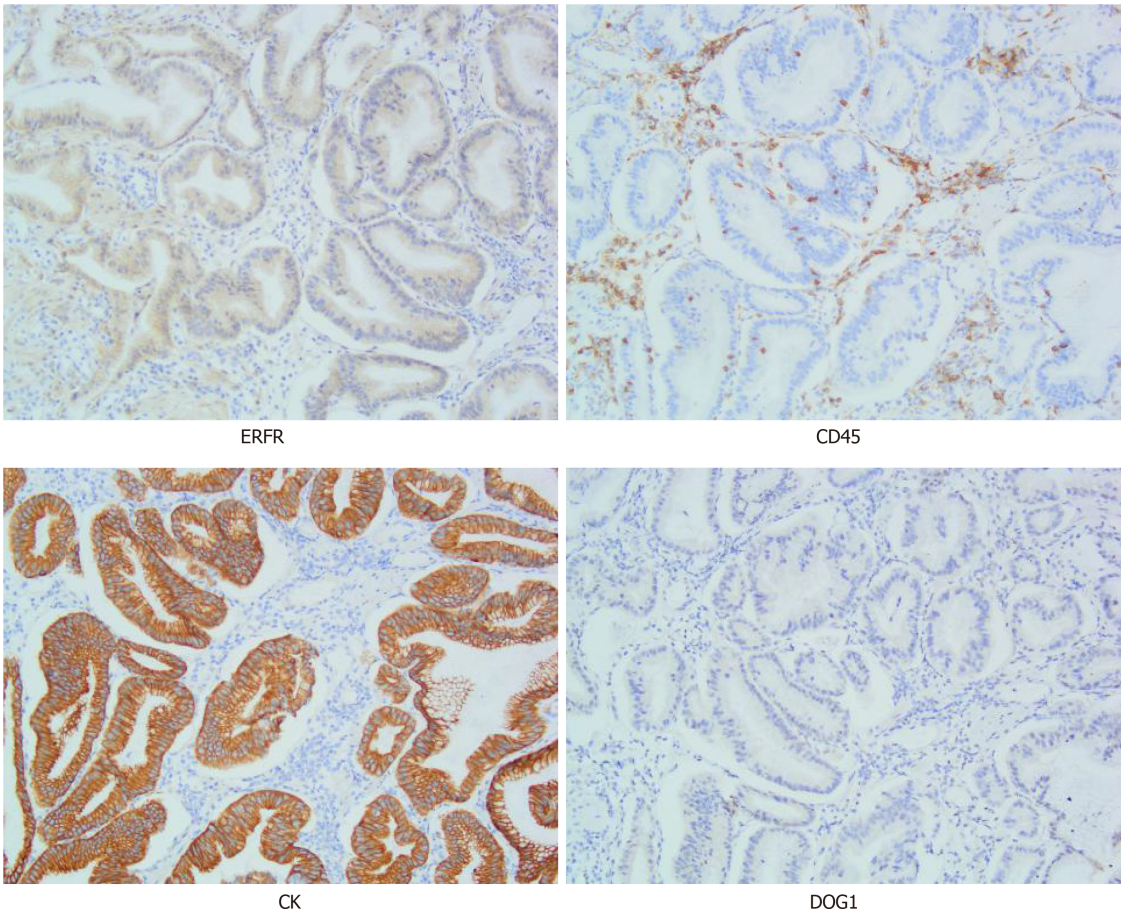

Figure 5 Immunohistochemical. ERFR: Positive expression; CD45: Positive lymphocytes scattered among hyperplastic glands; CK: The hyperplastic glands scattered regularly; DOG1: Proliferating spindle cells between hyperplastic glands.

and twisted, showing gyrus-like changes. After enhancement, the gastric wall was normal and the serosal surface was smooth. Positron emission tomography-CT showed increased nuclide uptake in the lesion area, which may be caused by chronic inflammation of the mucosa. This disease is relatively rare in clinical practice, and it is easy to be misdiagnosed as gastric cancer, gastric lymphoma, *etc*. Therefore, it is necessary to raise awareness of the disease and reduce misdiagnosis.

CONCLUSION

The disease is relatively rare and the cause is unknown. The symptoms and signs are atypical. It should be differentiated from chronic hypertrophic gastritis, gastric polyps, gastric cancer, gastric stromal tumor, gastroptosis, especially gastric lymphoma. Although the mucosa is hugely thickened, the lesions are only limited to the mucosal layer, so the morphology changes after compression, the stomach wall is soft, and emptying is delayed. Further gastroscopy can be performed, when the identification is difficult, and confirming the diagnosis depends on pathological examination. This disease is relatively rare in clinical practice. It is necessary to improve the understanding of the disease and reduce the occurrence of misdiagnosis.

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