Menetrier's disease - press review and summary of current knowledge

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ABSTRACT

Introduction

Menetrier's Disease is a rare and mysterious stomach disorder characterised by giant gastric folds, excessive mucus production, and protein loss. This comprehensive research article examines Menetrier's Disease, focusing on its clinical features, diagnosis, and available
treatment options. The article aims to provide a complete understanding of Menetrier's Disease, fill the knowledge gap, and encourage improved clinical management.

**Description of the State of Knowledge**

Menetrier's Disease is a rare condition, and its cause is still unknown, though it may be linked to previous viral and bacterial infections and increased expression of transforming growth factor-alpha (TGF-α). Diagnosis can be established by endoscopic examination and histological analysis of material from a full-thickness mucosal biopsy. Treatment options are limited and concentrated on symptom relief, while the outcome of the therapy may vary.

**Summary**

Menetrier's Disease presents significant difficulties in both diagnosis and treatment. This review outlines the clinical features, classification, diagnostic approaches, available treatment options, and prognosis for healthcare professionals and researchers seeking to understand this disease better. Better understanding of Menetrier's Disease is crucial to improve patient care and explore new, potential therapeutic avenues.

**Keywords**

Menetrier's Disease; gastric disorder; protein loss; hypoproteinemic hypertrophic gastropathy; giant hypertrophic gastritis.

**INTRODUCTION**

Menetrier's Disease is a rare gastric disorder characterized by distinctive features such as giant folds in the stomach lining, excessive mucus production, and little to no acid production. The condition also results in protein loss through the gastrointestinal tract, leading to hypoalbuminemia. Menetrier's Disease is also known as hypoproteinemic hypertrophic
gastropathy and giant hypertrophic gastritis. First identified by Pierre Eugène Ménétrier in 1888, Menetrier's Disease continues to pique the interest of clinicians and researchers due to its rare prevalence and not completely known etiology. The purpose of this review is to explore the disease, including its clinical characteristics, classification, diagnostic criteria, treatment approaches, and prognosis [1].

Menetriër's disease is mainly observed in middle-aged men between the ages of 30 and 60. While it is rare in women and children, it can be found in children under the age of 10. The etiology and pathogenesis of this disease are still not fully understood. Menetrief's primarily affects the body and fundus of the stomach, sparing the antrum (there have been a few cases with involvement of the antrum) [2,3].

**EPIDEMIOLOGY**

Menetrieër's disease is a rare condition with an incidence rate of less than one per 200,000 in the general population. It is prevalent in men aged between 30 and 60 years, with a peak around 55 years. Additionally, the disease can affect children under the age of 10, but is rare in older children and women [2,4].

**ETIOLOGY**

The etiology of this condition remains incompletely understood. The prevailing theory is that the disease is caused by an overexpression of the transforming growth factor (TGF-α) in the superficial gastric epithelium [5].

However, previous cytomegalovirus infection is believed to exert considerable influence over its incidence rate among children, whereas H. pylori infection is thought to play a major role among adults [6,7,8].

Some studies also suggest that the disease has a genetic component [9].

**HISTOPATHOLOGY**

The main feature of Menetrier's Disease is the growth of foveolar hyperplasia, often leading to the thickening of the mucosa by 1 centimeter or more. This growth creates a unique corkscrew-like appearance in the foveolar epithelium, while the main linear structure remains unaffected. The oxyntic glands are atrophic with a decrease or lack of parietal cells, and
lower-level glands may exhibit cystic dilation. A varied level of chronic inflammatory cells infiltration, accompanied by intermittent eosinophils, can be observed in the lamina propria. Notably, vertical strands of smooth muscle are discernible throughout the lamina propria [10].

SYMPTOMS

Menetrier's Disease is associated with a range of symptoms, such as epigastric pain (65%), weakness (60%), rapid weight loss (45%), nausea, and vomiting (38%). Diarrhea, anorexia, and gastrointestinal bleeding may also occur. Over time, a set of symptoms caused by hypoalbuminemia may develop, including ascites, pleural and pericardial effusion [1].

Menetrier's Disease can cause very rare symptoms like pyloroduodenojejunal intussusception, recurrent unprovoked venous thrombosis [11,12].

DIAGNOSIS

The diagnosis can be made based on the distinct changes observed endoscopy, full-thickness mucosal biopsy and laboratory tests.

1. Endoscopy and gastric X-ray after administration of barium contrast

Endoscopy and radiographs reveal marked bilaterally symmetric expansion of the gastric mucosal folds, which measure over 1 centimeter thick. The contrast may be diluted due to excessive mucus extraction [13,14].

2. Histology biopsy

The characteristic changes at the cellular level mentioned in the previous paragraphs are visible in the biopsy [14].

3. Laboratory tests

Blood count and iron levels - we are looking for features of chronic bleeding, iron deficiency and decreased white blood cell count.
In addition, we can expect increased hydrochloric acid secretion (there may also be normal secretion levels) and increased gastrin, decreased globulin and albumin levels.

We should also perform H. pylori test and, in children, a serological test for cytomegalovirus antibodies [2,10].

**DIFFERENTIAL DIAGNOSIS**

We differentiate the disease from other causes of biliary fold enlargement.

1. Chronic gastritis  
   Depending on the cause, e.g. a positive test for H. pylori or a characteristic lymphocytic infiltrate on biopsy.
2. Gastric cancer, lymphoma or non-malignant gastric cancer  
   The diagnosis is determined by the biopsy image.
3. Zollinger-Ellison syndrome  
   This condition is associated with the abnormal release of gastrin with tumors located in either the duodenum or pancreas. Excessive secretion of gastric acid results in the formation of peptic ulcers in the gastrointestinal tract. Histopathological examination indicates the overgrowth of parietal cells.

**TREATMENT**

In certain patients, the elimination of H. pylori has led to the reversal of lesions and complete recovery. The situation is analogous for individuals with CMV infection, where administering gancyclovir may result in improvement [2,15].

Supportive therapy involving a high-protein diet and administering PPIs or H2 blockers is recommended.

Octreotide has the potential to affect the TGF-α-EGFR pathway, which can be held liable for the proliferation of gastric mucosa [2,16].

Cetuximab seems to be a highly effective remedy for Menetrier's Disease. The medication attaches to the EGF receptor, which diminishes the formation of TGF-α. Its consumption has prevented gastrectomy and improved patient’s quality of life [2,16].
Surgical treatment is an option for selected cases of Menetrier's disease, specifically for patients experiencing intractable pain, symptomatic and remarkable hypoalbuminemia, chronic hemorrhage, obstruction of the gastrointestinal tract, and when gastric cancer cannot be ruled out. Total gastrectomy is the preferred method over partial gastrectomy [17,18,19].

**PROGNOSIS**

In pediatric cases, the disease is self-limiting or resolves following the successful treatment of cytomegalovirus infection [20].

In adults, the disease is progressive. Our goal is to impede the proliferative process and improve patients’ quality of life. There have also been cases of complete cure after eradicating H. pylori.

Patients with Menetrier's disease are at higher risk of developing gastric cancer, thus we suggest routine endoscopic examinations [21].

**Statement of the authors' contribution**

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