

Detection Advances in Diagnosis and Treatment of Gastric Arteriovenous Malformations: A Review

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Introduction

Clinical gastroenterology is a medical specialty that focuses on the diagnosis, treatment, and management of disorders and diseases affecting the Gastrointestinal (GI) tract, which includes the esophagus, stomach, intestines, liver, gallbladder, and pancreas. Gastroenterologists are physicians who specialize in this field and have expertise in the prevention, diagnosis, and treatment of GI conditions. Gastroenterologists use various diagnostic techniques, such as endoscopy, imaging studies, and laboratory tests, to evaluate and diagnose GI disorders. Common conditions that fall within the scope of clinical gastroenterology include Gastroesophageal Reflux Disease (GERD), peptic ulcers, Inflammatory Bowel Disease (IBD), Irritable Bowel Syndrome (IBS), liver diseases (such as hepatitis and cirrhosis), gallbladder and pancreatic disorders, and gastrointestinal cancers. Treatment approaches in clinical gastroenterology vary depending on the specific condition and may include lifestyle modifications, medication management, endoscopic procedures, and surgical interventions. Gastroenterologists often work in collaboration with other healthcare professionals, such as nutritionists, radiologists, and surgeons, to provide comprehensive care for patients with GI disorders. Regular screenings and check-ups with a gastroenterologist are important for individuals with risk factors or symptoms related to GI conditions [1,2].

Description

Consequently, Gastrointestinal Arteriovenous Malformation (AVM) is a significant cause of chronic and severe bleeding. It commonly occurs in the caecum and ascending colon, while its occurrence in the stomach and small intestine is rare. Gastric AVM, in particular, is the least common form of AVM in the gastrointestinal tract. Differentiating gastric AVM from angioectasia, which is a similar condition, is essential. Gastric AVM involves a direct connection between an artery and a vein. Minimally invasive interventions, such as endoscopic clipping or endovascular treatment, offer promising options for treating gastric AVM and avoiding partial gastrectomy. The primary blood supply to gastric AVM usually comes from the left gastric artery. However, in our case, it also received supply from the short gastric arteries originating from the splenic artery and left gastroepiploic artery. This congenital anomaly may be the result of an embryological developmental defect. We found only one similar reported case of this rare pathology in the English medical literature.

Angioembolization, typically performed by coiling the feeding artery, is a treatment option for gastric vascular malformation. In our case, we used intra-arterial injection of histoacryl, which refluxed into the splenic artery during the procedure. This resulted in massive splenic infarction and subsequent splenic abscess formation. Additionally, sympathetic left pleural effusion occurred. The abscess was drained using a pigtail catheter for two weeks. The left pleural effusion decreased and eventually resolved after removing the pigtail. Thrombocytosis, possibly due to hyposplenism or reactive causes, occurred and was temporarily

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managed with a prophylactic dose of aspirin (75 mg daily) until the platelet count returned to normal after two months. In our case, angioembolization was chosen as the treatment for the gastric AVM. However, ischemic complications following the procedure led to splenic infarction, splenic abscess formation, and left pleural effusion. We managed the condition conservatively with antibiotics, analgesics, and antiplatelet medication. The patient experienced full recovery within two months after the bleeding episode. These specialists play a crucial role in the early detection, management, and prevention of gastrointestinal diseases, ultimately contributing to the overall health and well-being of their patients. Gastric Arteriovenous Malformations (AVMs) are rare and account for only 1.4% of all intestinal AVMs [3].

Cyanoacrylates (CA) are fast-acting adhesives widely used since 1957 in industrial, domestic, and medical applications. They bond quickly to various materials at room temperature. When CA comes into contact with water or an anion, it undergoes polymerization, hardening and becoming adhesive. In their liquid form, CA have low viscosity. NBCA, a type of CA, has been employed in endoscopic sclerotherapy for esophageal varices and is also used in treating bleeding disorders and Arteriovenous Malformations (AVM). In this treatment, NBCA is mixed with an oily contrast medium composed mainly of the ethyl ester of iodinated poppy-seed oil fatty acids (Lipiodol, Guerbet Japan, Tokyo, Japan) and injected into blood vessels. There is a growing clinical demand for vascular embolization using NBCA. Once in contact with blood plasma, NBCA begins to polymerize. Consequently, the injected blood vessels are embolized through three mechanisms: (1) cast and thrombus formation, (2) NBCA adhering to the inner vascular wall, and (3) damage to the vascular endothelium [4,5].

Conclusion

Gastric AVM is rare. Management depends on the size and extent of the lesion. Histoacryl carries significant risk in treating AVM compared to direct AV fistula. Using coils to embolize the feeding artery is a safer option. The first case reports of gastric AVMs date back to the 1880s, where they were associated with severe upper gastrointestinal bleeding and death. Since the 1970s, gastric AVMs have been diagnosed using endoscopy and are typically treated surgically. In the 2000s, successful endoscopic therapy and balloon-occluded retrograde transvenous obliteration have been reported as alternative treatment options

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Conflict of Interest

The Author declares there is no conflict of interest associated with this manuscript.

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