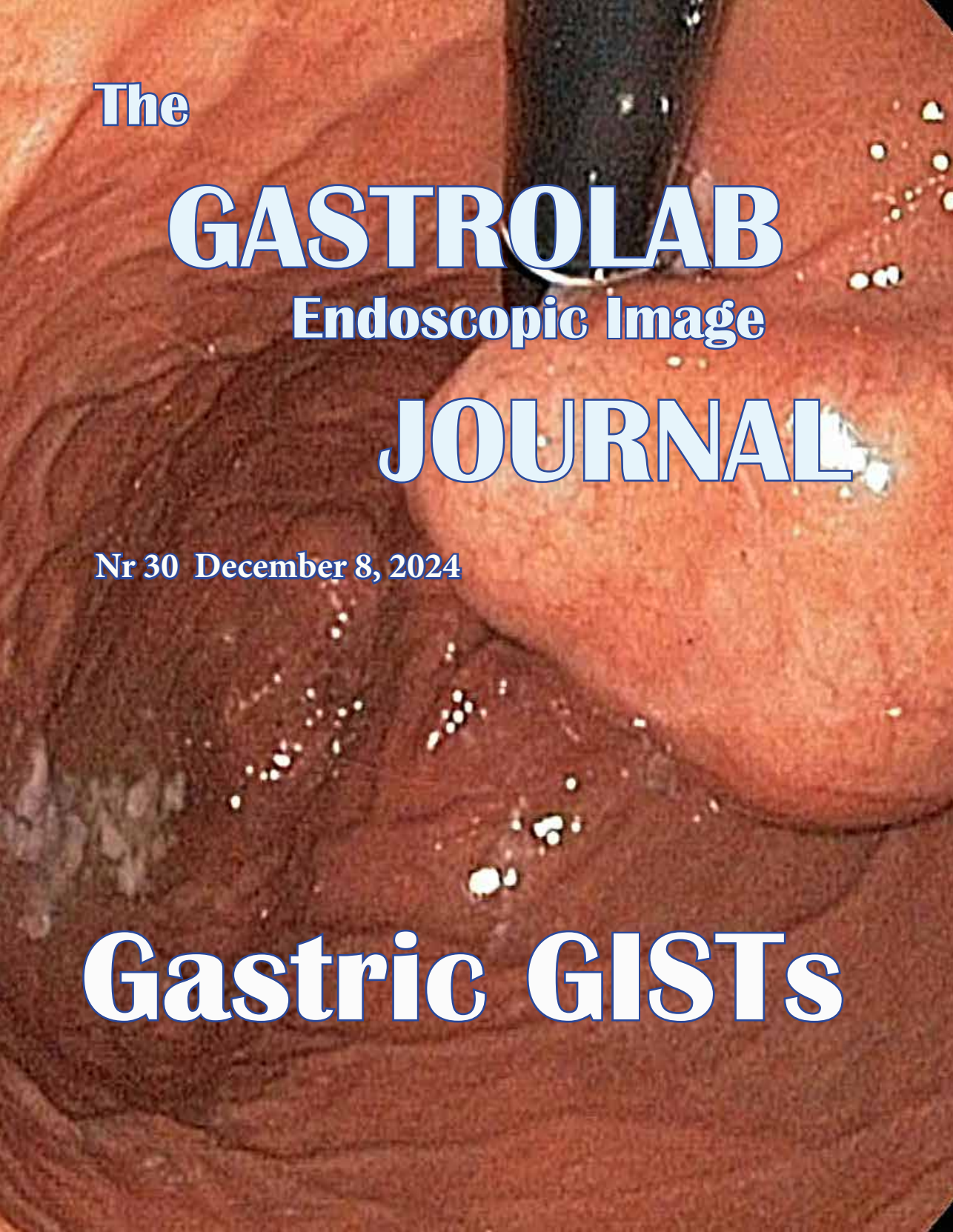
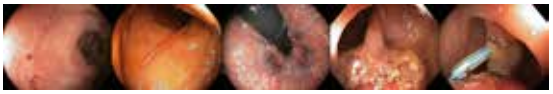


The GASTROLAB Endoscopic Image JOURNAL

Nr 30 December 8, 2024

Gastric GISTs



The GASTROLAB Endoscopy Image JOURNAL: A Pinnacle in Medical Imaging Excellence

Since its inception in early 2024, The GASTROLAB Endoscopy Image Journal stands as a pioneering publication in the realm of medical imaging. Released every Tuesday, this weekly magazine, accessible at www.vpress.ovh/journal.htm, offers an unparalleled exploration of various themes, showcasing high-quality images focusing on specific aspects of the digestive tract or diseases.

A Global Beacon of Endoscopic Excellence

With an ambitious vision, we aspire for The GASTROLAB Endoscopy Image JOURNAL to be recognized as the preeminent publication in its field worldwide. We invite collaboration from the esteemed medical community to contribute their exceptional endoscopic images, thereby fostering a collective effort to make this journal the most comprehensive of its kind globally.

We encourage individuals possessing noteworthy endoscopic images to submit them to glabinfo@gmail.com. Please include a brief caption, a clear indication of permission for publication on our site, and specify whether a copyright sign and your email address should accompany the images. This ensures potential commercial publishers can seek permission directly from contributors for any intended use.

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Support Our Mission

If you wish to support The GASTROLAB Endoscopy Image Journal through advertisements or other means, kindly contact us at glabinfo@gmail.com. Your support not only facilitates the continuation of this vital resource but also contributes to the success of budding endoscopists worldwide.

A Noble Purpose

Under the editorial leadership of Hans Björknäs, our Editor-in-Chief, The GASTROLAB Endoscopy Image Journal seeks to be more than just a publication; it aims to be a catalyst for success. If this magazine aids even one young, aspiring endoscopist in their career journey, we consider our mission accomplished.

Join us in shaping the future of endoscopy imaging – together, let's create a benchmark of excellence in medical journalism.

Sincerely,

Hans Bjorknas
Editor-in-Chief, The GASTROLAB Endoscopy Image Journal

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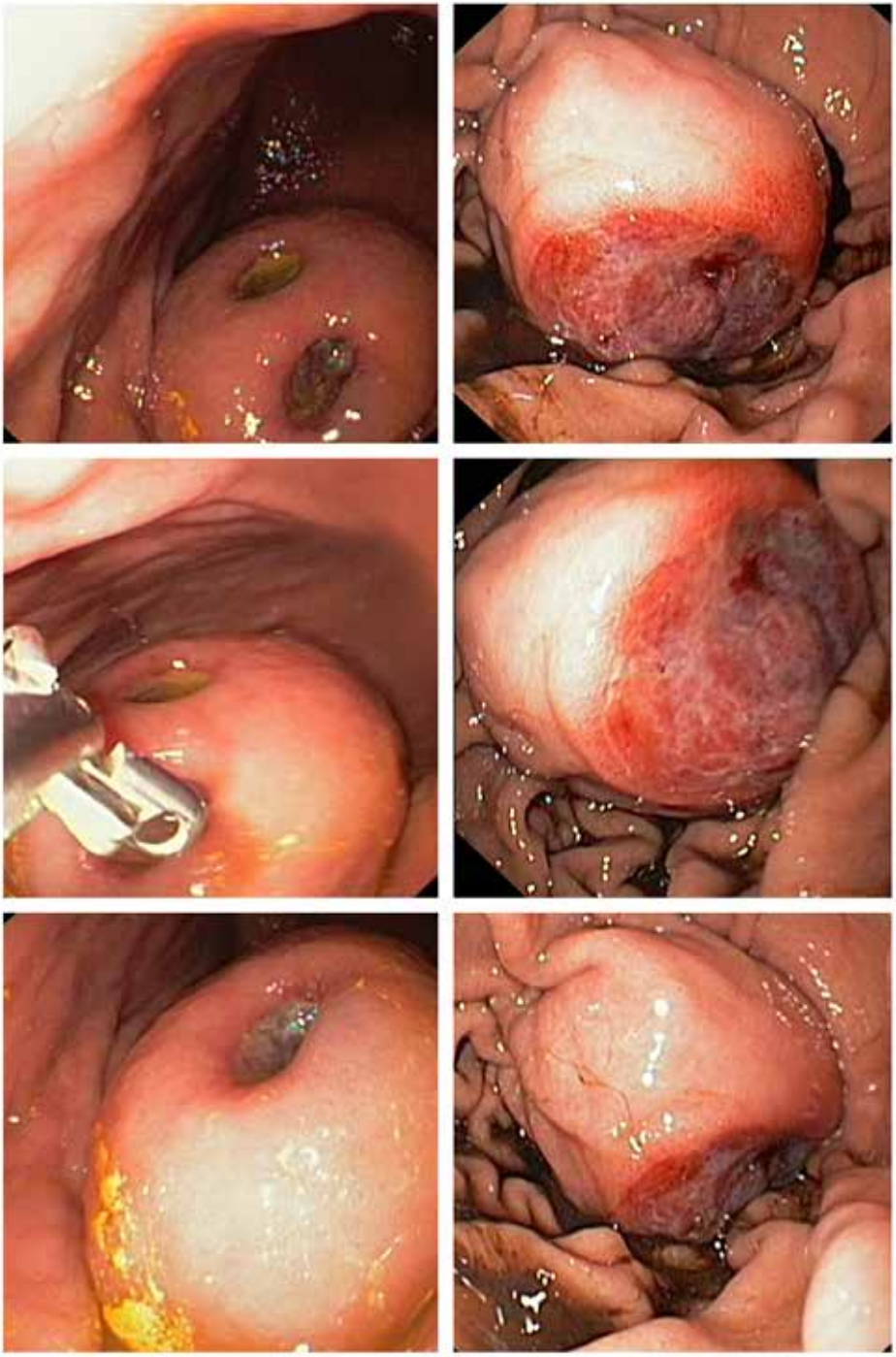


An ulcerated gastric GIST

Gastric GISTs: A Comprehensive Overview for the Medical Professional

Gastrointestinal stromal tumors (GISTs) are the most common mesenchymal neoplasms of the gastrointestinal (GI) tract, with the stomach being their most frequent site of origin. These tumors, which were historically misclassified as leiomyomas or leiomyosarcomas, are now recognized as a distinct entity due to advancements in molecular and immunohistochemical diagnostics. This article explores the clinical, pathological, and molecular features of gastric GISTs, alongside current approaches to diagnosis and treatment.

Epidemiology and Pathogenesis

GISTs are relatively rare, with an estimated annual incidence of 10–20 cases per million people. Gastric GISTs account for approximately 60–70% of all cases. These tumors typically occur in individuals over the age of 50, with no significant gender predilection.

The pathogenesis of GISTs is closely linked to mutations in the KIT gene or the platelet-derived growth factor receptor alpha (PDGFRA) gene. These mutations lead to constitutive activation of tyrosine kinase signaling, promoting cellular proliferation and survival. Around 85% of GISTs harbor mutations in these genes, while the remainder are classified as wild-type GISTs, which may involve other genetic alterations such as SDH (succinate dehydrogenase) deficiencies.

Clinical Presentation

The symptoms of gastric GISTs vary widely, ranging from asymptomatic cases discovered incidentally during endoscopy or imaging, to significant presentations such as:

Gastrointestinal bleeding: Often due to tumor ulceration into the gastric lumen, manifesting as melena or hematemesis.
Abdominal pain or discomfort: A common symptom when the tumor reaches a considerable size.
Mass effect: Large tumors may cause early satiety or mechanical obstruction.
Paraneoplastic syndromes are rare, and systemic manifestations are typically associated with advanced disease or metastatic spread.

Diagnostic Evaluation

Endoscopy and Imaging
Endoscopic examination is often the first step in diagnosing gastric GISTs, though these tumors may appear as submucosal masses covered by intact mucosa. Endoscopic ultrasound (EUS) is invaluable for characterizing the lesion's size, location, and echogenicity, as well as guiding fine-needle aspiration for biopsy.

Contrast-enhanced computed tomography (CT) is the imaging modality of choice for staging and preoperative planning, while magnetic resonance imaging (MRI) may be utilized for liver metastases evaluation. Positron emission tomography (PET) can help assess treatment response in advanced or metastatic cases.

Histopathology and Im-

munohistochemistry
The definitive diagnosis of GISTs relies on histological and immunohistochemical analysis. Gastric GISTs are typically composed of spindle cells, though epithelioid or mixed histology may be observed. Key immunohistochemical markers include:

KIT (CD117): Expressed in 95% of cases, a hallmark of GISTs.
DOG1 (Discovered on GIST-1): Highly sensitive and specific for GISTs.
CD34: Expressed in 70–80% of gastric GISTs, though less specific.
Genetic testing for KIT and PDGFRA mutations is recommended in cases where treatment with tyrosine kinase inhibitors (TKIs) is being considered.

Management Strategies

Surgical Resection
Complete surgical resection with negative margins remains the cornerstone of treatment for localized gastric GISTs. Lymphadenectomy is generally unnecessary, as lymphatic spread is uncommon. Minimally invasive approaches, such as laparoscopic surgery, are increasingly utilized for smaller tumors (<5 cm).

Adjuvant and Neoadjuvant Therapy
Tyrosine kinase inhibitors, particularly imatinib, have revolutionized the management of GISTs. Adjuvant imatinib is recommended for high-risk tumors, while neoadjuvant therapy may be employed to reduce tumor size and facilitate resection in borderline operable cases.

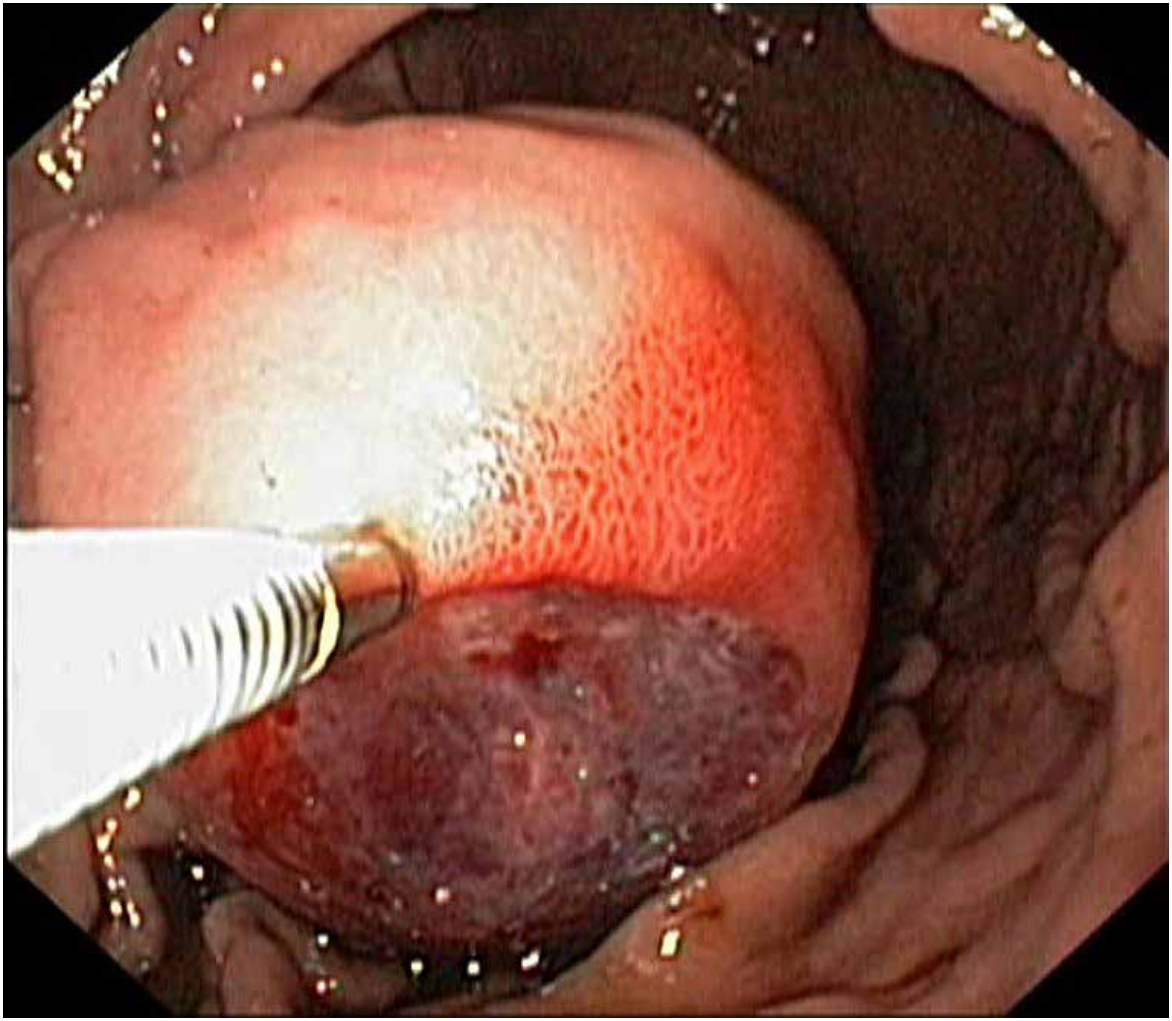
Advanced and Metastatic Disease
For unresectable or metastatic gastric GISTs, imatinib is the first-line treatment, with sunitinib and regorafenib used as second- and third-line agents, respectively. Emerging therapies, including newer TKIs and immune checkpoint inhibitors, are under investigation.

Prognostic Factors

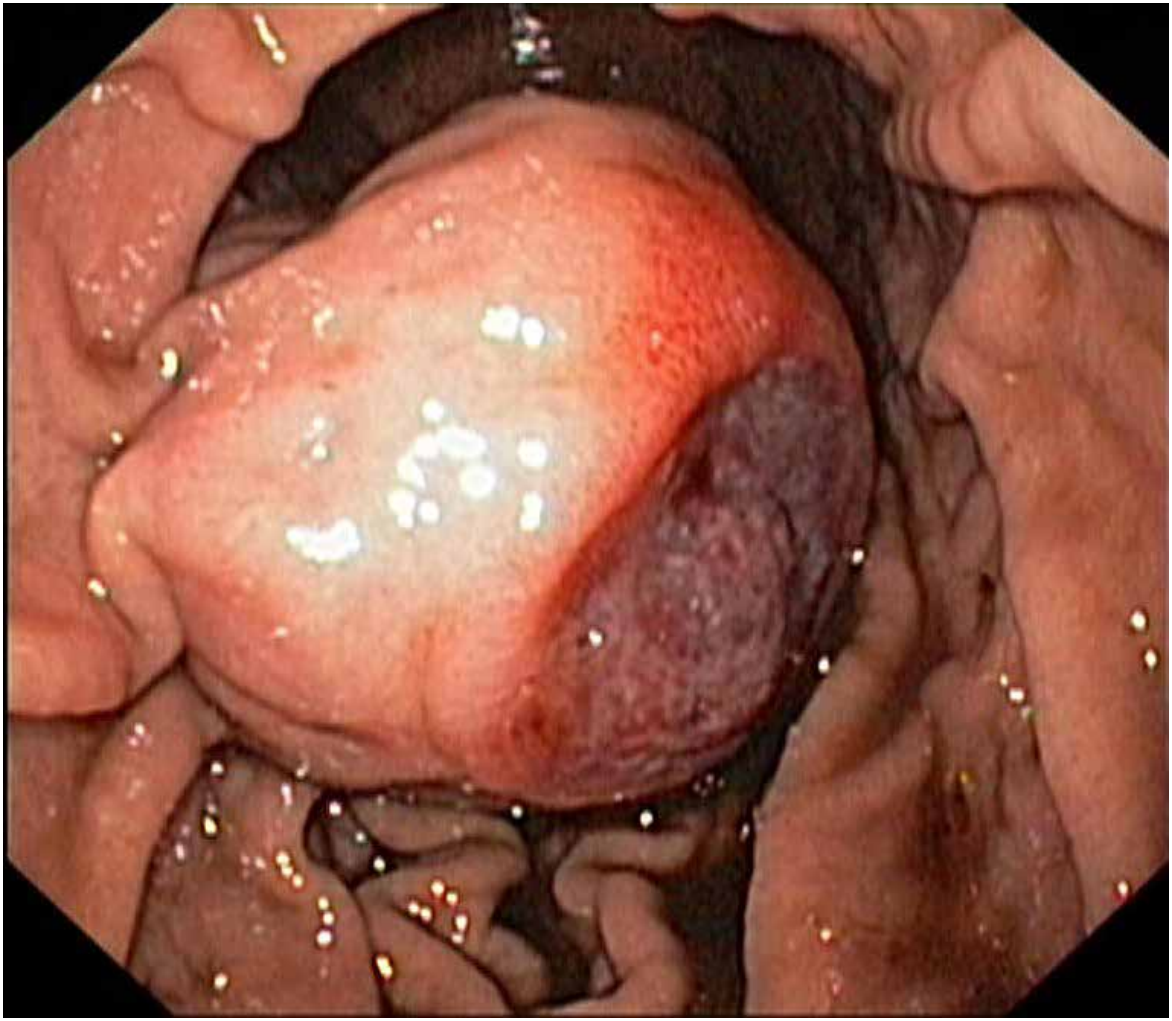
Tumor size: Larger tumors are associated with higher recurrence risk.
Mitotic rate: High mitotic activity correlates with worse outcomes.
Mutation type: KIT exon 11 mutations are associated with better responses to imatinib, whereas PDGFRA D842V mutations confer resistance.
The modified NIH criteria and the Armed Forces Institute of Pathology (AFIP) system are commonly used for risk stratification.

Future Directions
Research into the molecular mechanisms underlying GISTs continues to provide insights into novel therapeutic targets. The development of resistance to TKIs remains a challenge, highlighting the need for alternative strategies, such as combination therapies and next-generation inhibitors. Additionally, the role of liquid biopsy in monitoring disease progression and treatment response is a promising area of investigation.

Gastric GISTs, though rare, represent a distinct and well-characterized subset of GI tumors. Advances in molecular diagnostics and targeted therapies have significantly improved outcomes for patients. A multidisciplinary approach, incorporating surgical, medical, and molecular expertise, is essential for optimizing care. Continued research and innovation hold the key to further advancements in the management of this challenging yet treatable disease.



An ulcerated GIST



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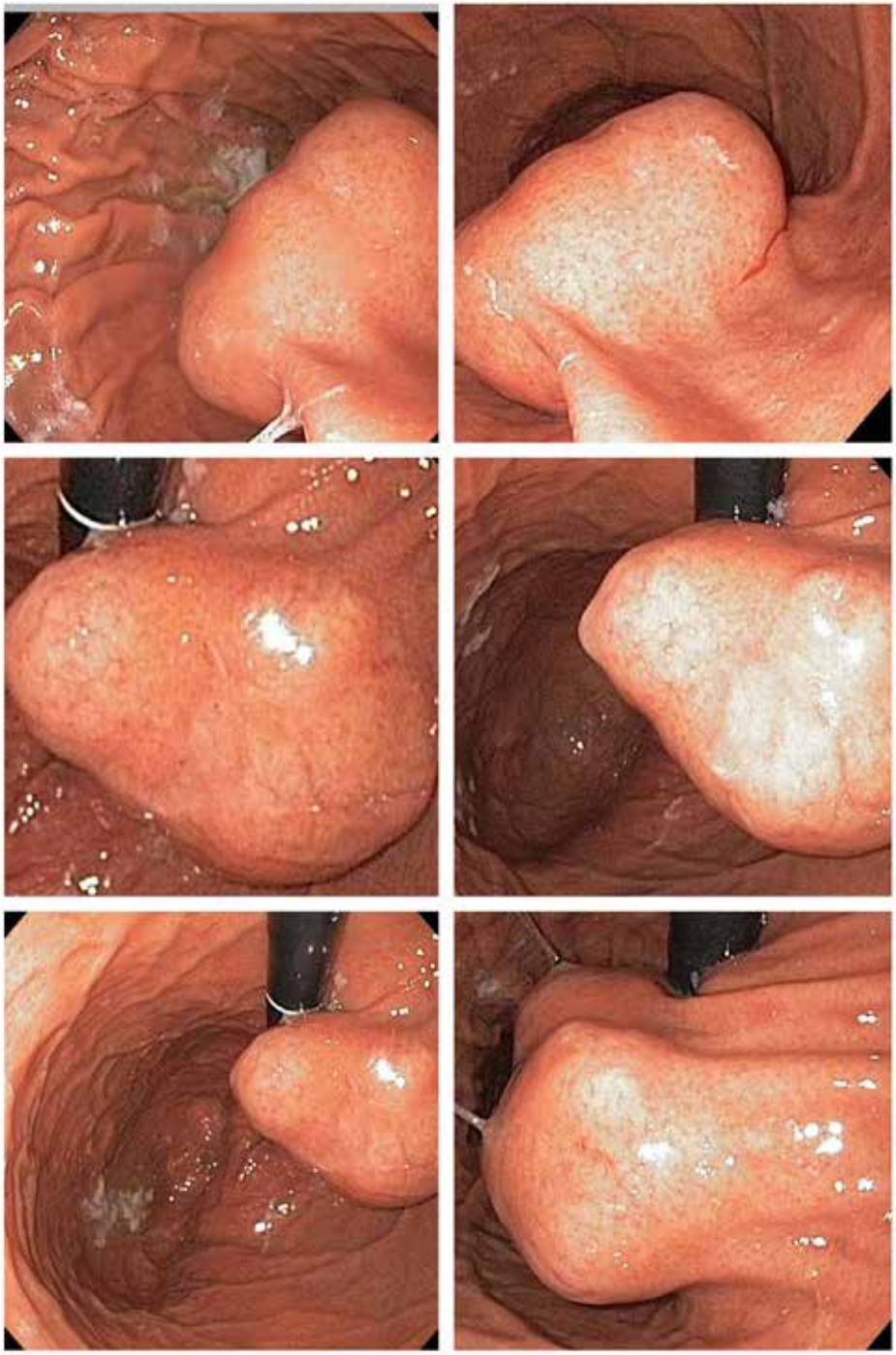

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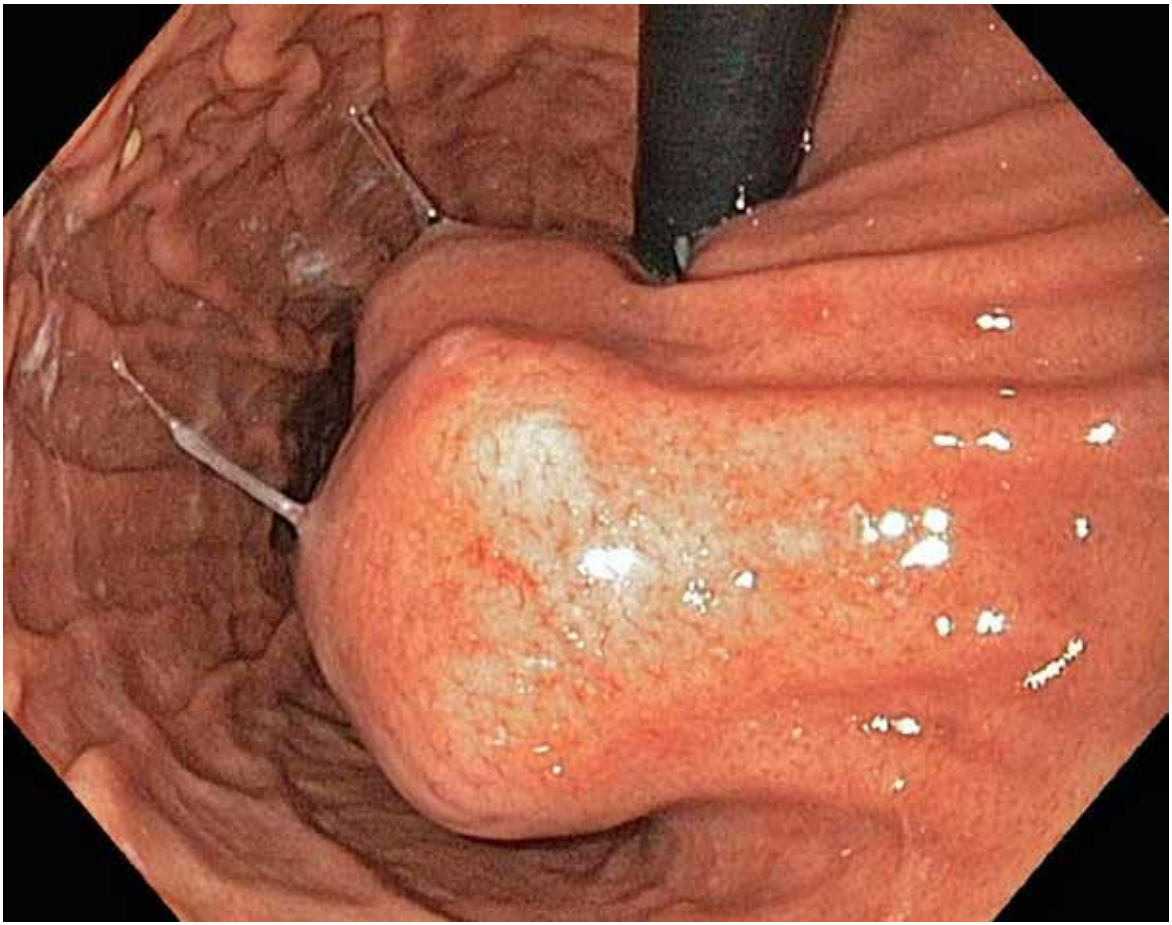

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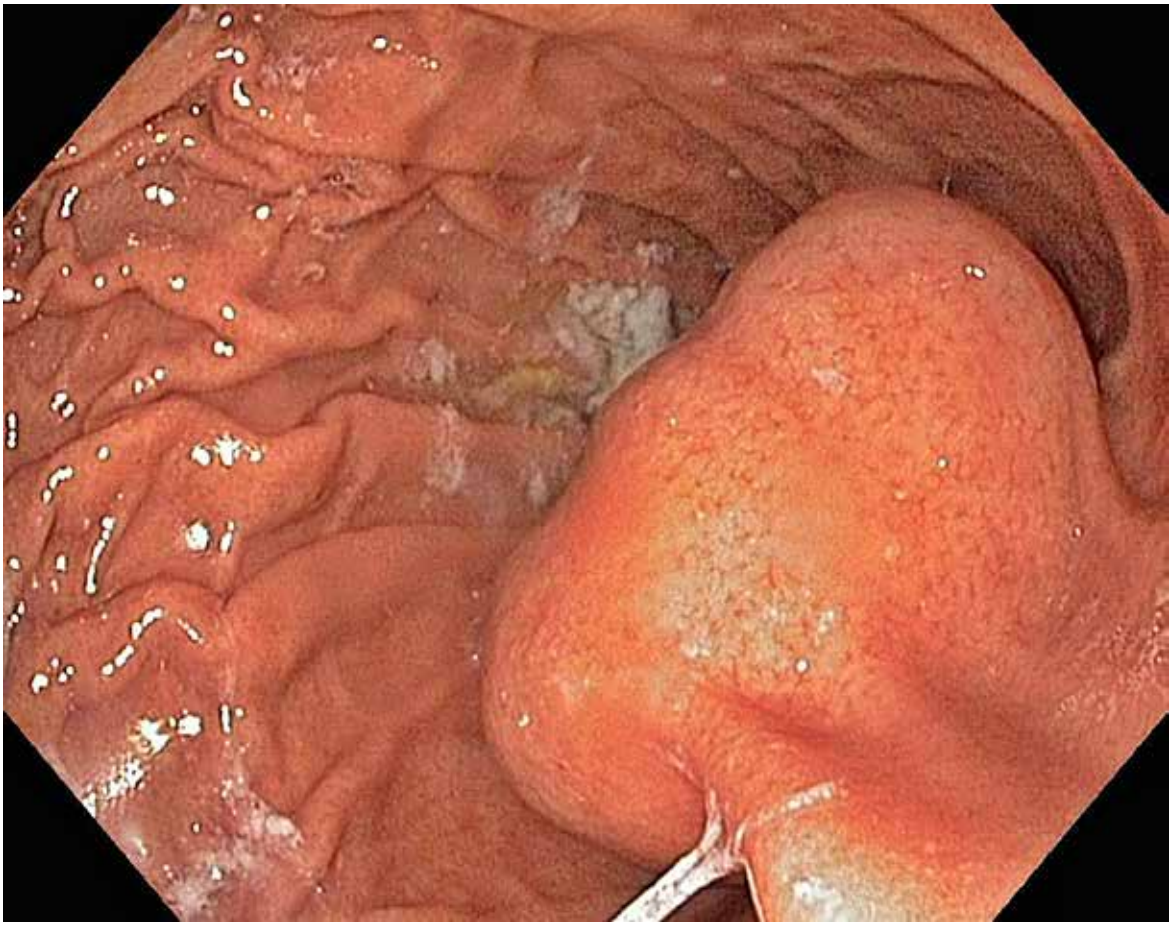

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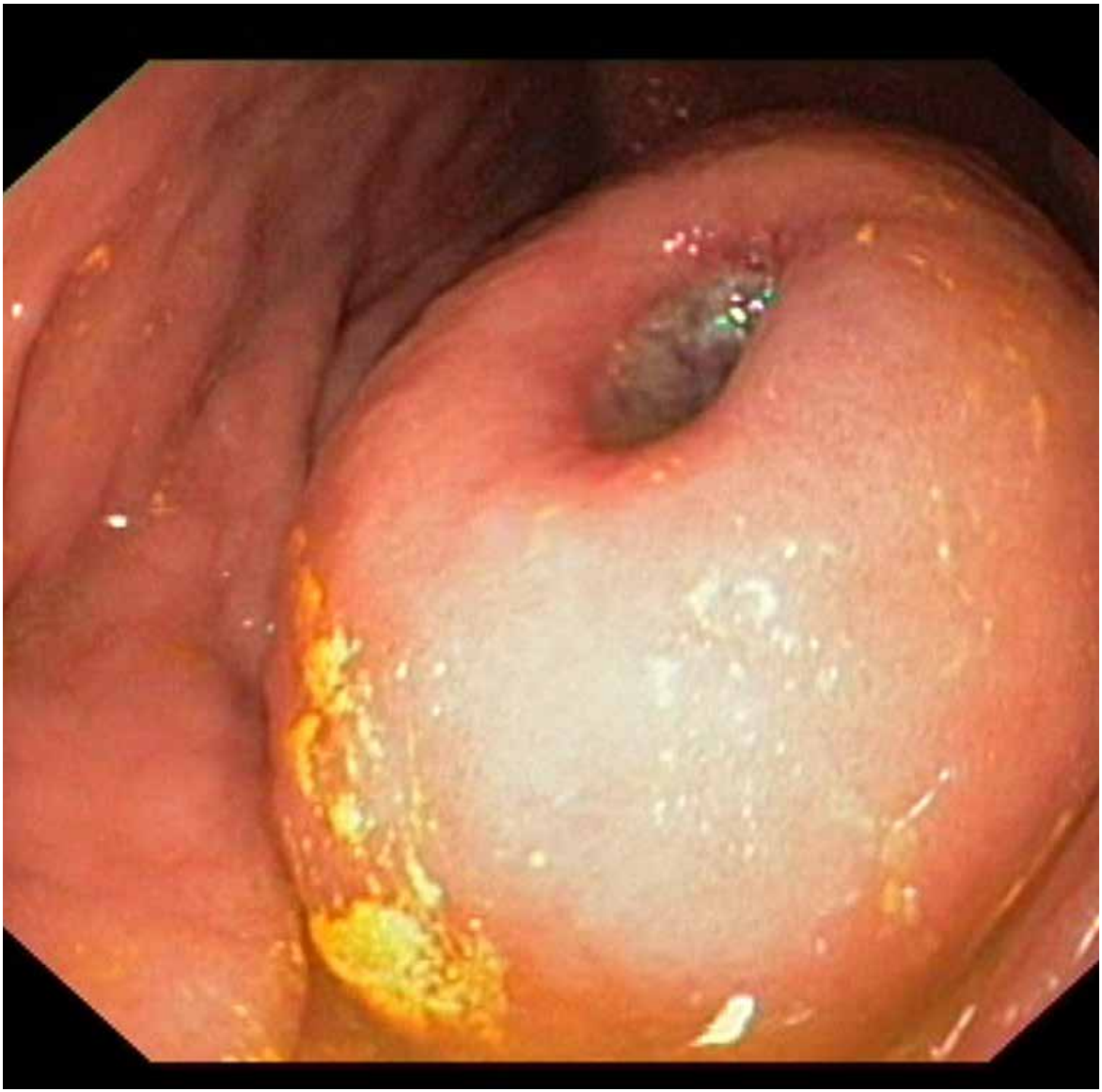

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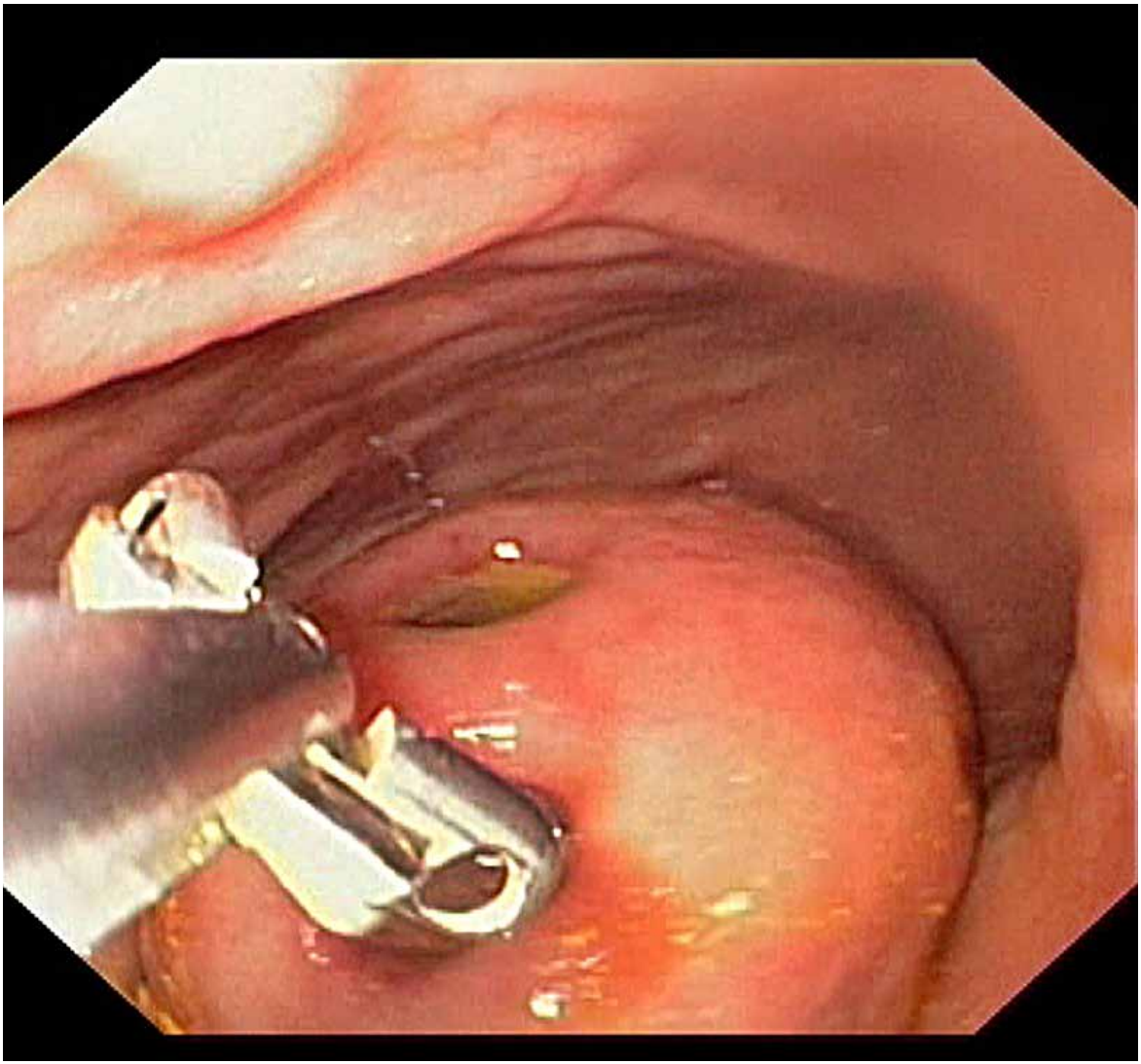

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