

Title:

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The usefulness of barium enema using a water-soluble contrast medium as an emergency examination

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Keywords: Colorectal obstruction. Colonic cancer. Ileus. Endoscope. Gastrografin.

Background

Colorectal obstruction is a critical condition requiring prompt diagnosis and intervention. Gastrografin, a water-soluble contrast agent, combines diagnostic and therapeutic benefits, facilitating bowel cleansing and enhancing intestinal motility[1]. This study assessed the safety and effectiveness of Gastrografin enemas in emergency

settings.

Methods

From 2013 to 2023, 40 patients with suspected colorectal obstruction identified through imaging studies, including CT, underwent Gastrografin enemas. The contrast agent was diluted 3–4 times with warm water and administered using an automatic injector. Antispasmodic agents were routinely administered, and air insufflation was avoided to minimize complications. Glycerin enemas were used as needed, and no oral laxatives were administered.

Results

Out of 40 patients, 14 were diagnosed with impaired intestinal transit caused by colorectal cancer, with 13 undergoing colonoscopy. The use of Gastrografin revealed the expulsion of fecal masses, provided a clear visual field, showed minimal adhesion to the scope, and allowed successful access to the lesion in all cases.

In 17 cases, the lesions were attributed to intestinal hypomotility or fecal masses without stenosis. However, the administration of Gastrografin enhanced intestinal peristalsis, leading to the expulsion of fecal masses after the examination and subsequent symptom relief.

The remaining 9 cases were categorized as follows: 5 cases of stenosis due to cancer seeding or invasion into adjacent organs, 3 cases of deformity-induced colonic stenosis caused by diverticula, and 1 case of sigmoid colon prolapse associated with inguinal hernia.

Consideration

Gastrografin is frequently used as an alternative to barium for enteroscopy when there is an obstruction of passage.

Its high fluidity allows the contrast medium to flow smoothly, making it effective for advancing through the intestine. Additionally, Gastrografin is highly beneficial as a pretreatment for endoscopy due to its ability to enhance intestinal motility, provide

excellent cleansing effects, and maintain transparency [2].

Conclusion

Gastrografin enemas are a safe, effective option for diagnosing and managing colorectal obstruction, especially as preparation for emergency colonoscopy. Further studies should evaluate its broader clinical applications.

Conflicts of Interest: None.

Funding information: None.

Data availability: None.

References

- [1] Maruoka H, Hidaka Y, Katagiri T, et al. Clinical Study of Gastrointestinal Angiography with Gastrografin in Patients with Ileus. The Journal of Japan Physicians Association 1997 ; 12 : 67-73.
- [2] Matsukawa H, Shitraga N, Tsugu T, et al. The use of water-soluble contrast enema without pretreatment for the diagnosis of colon disease Journal of Japanese Society of Gastroenterology, 2007; 104.9: 1344-1351.

Table 1: Clinical Characteristics and Findings of Patients

Category	Number of Cases	Details
Colorectal Cancer	14	<ul style="list-style-type: none"> - Impaired intestinal transit. - 13 underwent colonoscopy. - Gastrografin improved visual field and lesion access.
Intestinal Hypomotility/Fecal Masses	17	<ul style="list-style-type: none"> - Caused by hypomotility or fecal masses without stenosis. - Gastrografin increased peristalsis, relieving symptoms.
Other Causes	9	<ul style="list-style-type: none"> - 5 cases: Stenosis due to cancer seeding/invasion. - 3 cases: Deformed stenosis caused by diverticula. - 1 case: Sigmoid colon prolapse due to inguinal hernia.

This table summarizes the clinical profiles, diagnostic outcomes, and therapeutic findings of the patients included in the study. It categorizes cases based on the underlying causes of impaired intestinal transit and highlights the respective diagnostic and management approaches.