Case Report

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# Uncontrollable Rectal Bleeding Following Wegener's Granulomatosis: A Case Report

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**Running Title** Rectal Bleeding after Wegener's Granulomatosis



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## ABSTRACT

Wegener's granulomatosis is an autoimmune vasculitis affecting small and medium vessels, typically involving the respiratory tract and kidneys. Gastrointestinal manifestations are rare and pose diagnostic and therapeutic challenges. A 65-year-old man presented with severe abdominal pain and melena. He developed renal failure requiring dialysis and underwent multiple plasmapheresis sessions. During hospitalization, he experienced massive rectal bleeding and suspected hemoptysis. Endoscopy and colonoscopy revealed no obvious lesions, but CT angiography demonstrated reduced abdominal blood flow, leading to surgical resection of necrotic tissue. Despite intervention, bleeding persisted, and enteroscopy showed multiple ulcers in the jejunum and ileum. Gastrointestinal bleeding in Wegener's granulomatosis may result from vascular damage or tissue necrosis and can cause life-threatening complications such as anemia and shock. Early recognition and timely treatment are essential to reduce morbidity and mortality.

## Introduction

Wegener's granulomatosis, first described in 1936, is an autoimmune disease that can affect multiple organs. It is mainly characterized by upper and lower airway involvement, glomerulonephritis, and varying degrees of vasculitis in small veins and arteries [1,2]. Wegener's granulomatosis is a rare disease with equal prevalence in both sexes, occurring at a rate of about 10–20 cases per million people, depending on the geographic region [3,4]. Active Wegener's granulomatosis causes general symptoms such as fever, fatigue, and weight loss, and commonly affects the upper respiratory tract with issues such as sinusitis, rhinitis, and ear problems [5].

Most patients have pulmonary involvement, showing nodular infiltrates and necrotizing granulomatous

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vasculitis, leading to cough, hemoptysis, shortness of breath, and chest pain. Upper airway, sinus, and nasal involvement can cause inflammation, necrosis, and granuloma formation with or without vasculitis, resulting in sinus pain, purulent or bloody discharge, nasal mucosa ulceration, septal perforation, saddle nose deformity, or otitis media [2,4].

In Wegener's granulomatosis, kidney involvement occurs in 77% of patients, starting as focal and segmental glomerulonephritis and potentially causing rapidly progressive renal failure. Eye involvement appears in 8–16% initially and 28–58% overall, ranging from conjunctivitis to exophthalmos. Skin lesions occur in 46% of patients, including rashes, nodules, papules, and vesicles [6–8]. Gastrointestinal symptoms affect 10–24% of patients, causing diarrhea, nausea, vomiting, and bleeding [9]. Nervous system involvement occurs in 30–40% of patients, with rare cardiac complications such as valvular lesions and pericarditis [6].

The presence of necrotizing granulomatosis, which is an irreversible manifestation of granulomatosis, can be confirmed through biopsy [10]. Wegener's granulomatosis can be detected using nonspecific laboratory findings, including elevated ESR and CRP, mild anemia and leukocytosis, mild hypergammaglobulinemia, slightly increased rheumatoid factor, antineutrophil cytoplasmic antibodies (ANCAs), and high anti-PR3 titers (c-ANCAs) [2,11].

Because Wegener's granulomatosis is a rare disease, if it is not treated promptly, it can be fatal [12]. Patients may present with extensive and confusing symptoms, so clinicians must be able to recognize Wegener's disease, including rare gastrointestinal manifestations. This study reports a case of uncontrollable rectal bleeding caused by Wegener's granulomatosis.

## Case Presentation

The patient was a 65-year-old man who presented to the Kerman emergency room in July 2023 with severe epigastric pain radiating to both sides, persisting for a week and unresponsive to medication. The pain was constant and worsened with eating, accompanied by nausea and non-bloody vomiting. He had a history of hypertension but no prior surgeries. Routine tests and clinical evaluation prompted further diagnostics, revealing Anti-PR3 (c-ANCA) = 1.66, Anti-CCP = 2.3, anti-dsDNA = 6.4, CRP = +3, and ESR = 88, leading to a diagnosis of Wegener's granulomatosis.

He continued treatment at Shahid Sadoughi Hospital in Yazd but experienced ongoing abdominal pain, melena, nausea, vomiting, skin lesions, and decreased urine output. Swelling of the hands and feet began one week prior. Vital signs on admission were BP 160/40 mmHg, PR 81 bpm, and T 35.5°C. Chest radiography showed pulmonary infiltration consistent with Wegener's granulomatosis (Figure 1).

Due to persistent abdominal pain worsened by eating, continuous vomiting, and elevated liver enzymes (AST 73, ALT 47, ALP 1830), the patient underwent MRCP[1], which was normal. From the start of hospitalization, he received pulse methylprednisolone and pulse Endoxane for immunosuppression. Because of high

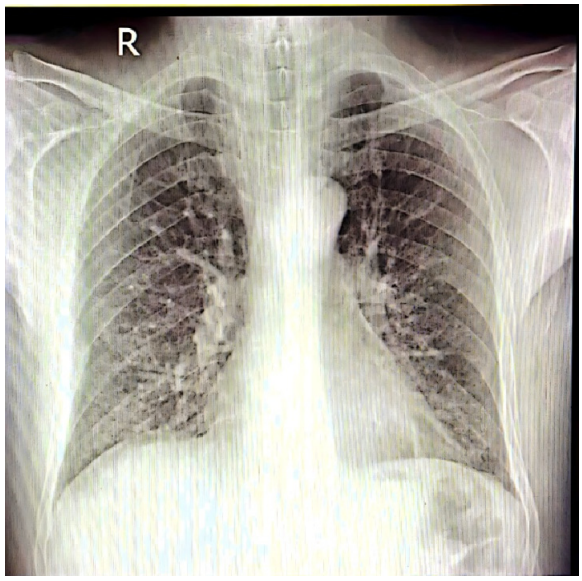


**Fig. 1.** Chest X-ray

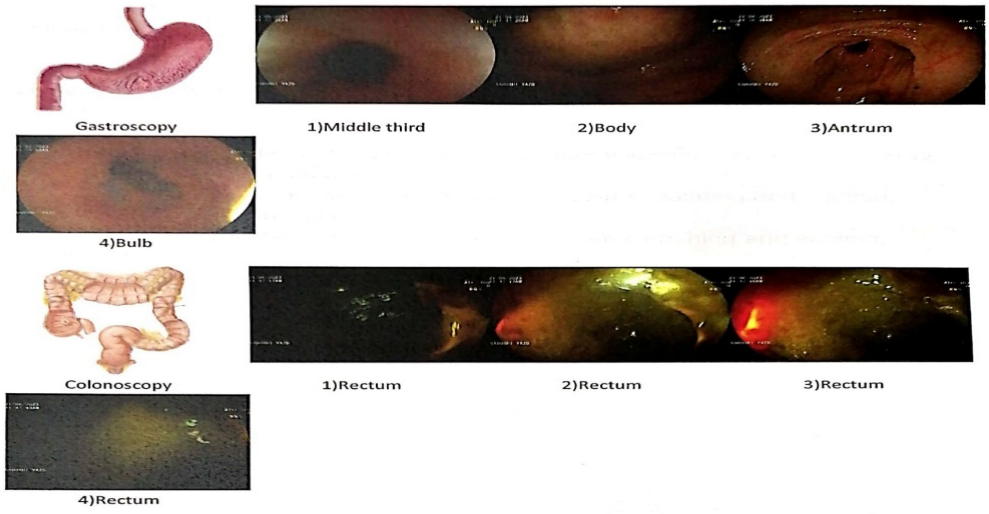


**Fig. 2.** First-time endoscopy and colonoscopy

WBC and fever, vancomycin and meropenem (500 mg daily) were administered.

The patient developed AKI[2]; Aperex, Nephrovit, and Renagel were started, and albumin was given due to low serum ALB. Three days later, high creatinine (4.5 mg/dl), confusion, nausea, and vomiting prompted temporary catheter placement and two emergency dialysis sessions. Kidney biopsy under ultrasound guidance showed 10% nephron atrophy. Hemoglobin dropped from 15.3 to 12.3 g/dl over four days, leading to gastroenterology consultation. Endoscopy revealed edema in D1, mild deformation from D1 to D2, and mild atrophy in D2. Colonoscopy was recommended to be repeated due to inadequate preparation (Figure 2).

An infectious disease consultation was performed to adjust antibiotics. Bactek, U/A, and U/C tests were ordered. Urine culture showed no bacterial growth, but U/A revealed WBC 12–14 and few bacteria. Five days after hospitalization, the patient developed bright rectal bleeding and possible hemoptysis. Drip pantoprazole and octreotide were started, and with hemoglobin at 7.6 g/dl, a packed cell transfusion was given.

Due to active rectal and potential pulmonary bleeding, emergency therapeutic plasma exchange was performed, using normal saline, packed cells, and fresh frozen plasma. The patient was then transferred to the ICU for closer monitoring and care. During ongoing treatment for Wegener's, he underwent seven days of therapeutic plasma exchange. Hemoglobin remained low at 6.9 g/dl, prompting surgical consultation to investigate rectal bleeding.

Abdominal CT angiography with and without contrast showed normal flow in the abdominal aorta, renal, and iliac arteries, with atherosclerotic soft and calcified plaques. Repeat colonoscopy revealed fresh blood throughout the large intestine, multiple clots, and vascular patterns up to 2 cm near the ileocecal valve. Endoscopic evaluation of the small intestine showed ulcers at the beginning of the jejunum and duodenum, with white plaque and esophageal candidiasis. Gastric mucosa, cardia, fundus, and duodenum appeared normal, with no bleeding observed (Figure 3). A final diagnosis of gastropathy was suggested.

Biopsy of the stomach and duodenum revealed mild chronic duodenitis with vascular congestion and absence of *Helicobacter pylori*. Small intestine angiography was performed to further evaluate the bleeding.

The patient presented with persistent rectal bleeding unresponsive to vitamin K, tranexamic acid, FFP, and PC. Laparotomy revealed omental adhesions and a necrotic segment of the small intestine, which was resected. Postoperatively, bleeding continued.

The patient was transferred to Taleghani Medical Center and underwent clinical enteroscopy. Initial MiroCam capsule imaging showed multiple large ulcers in D3 and the proximal jejunum, as well as several small ulcers in the proximal ileum. Double-balloon enteroscopy enabled direct visualization and ablation of bleeding sites, achieving hemostasis (Figure 4).

The patient was monitored for gastrointestinal and

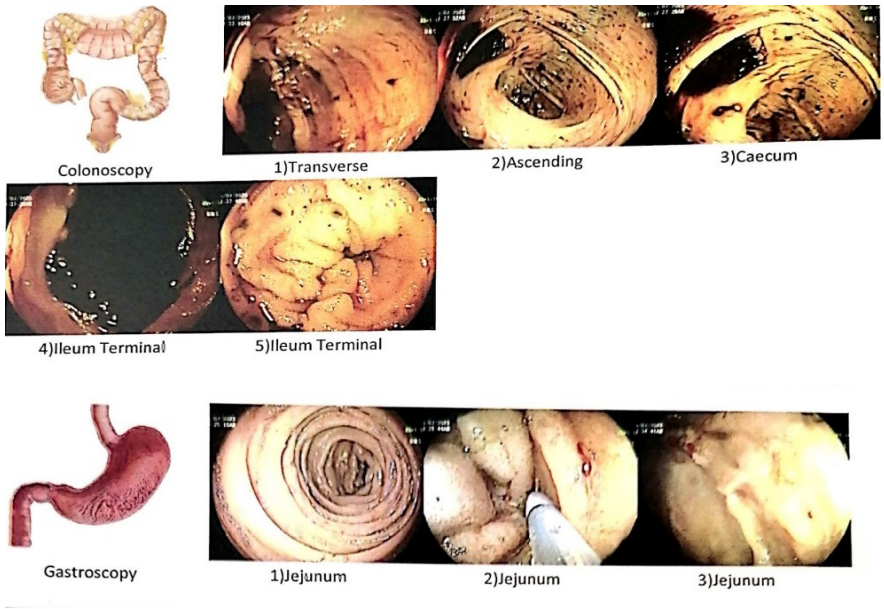


**Fig. 3.** Second endoscopy and colonoscopy

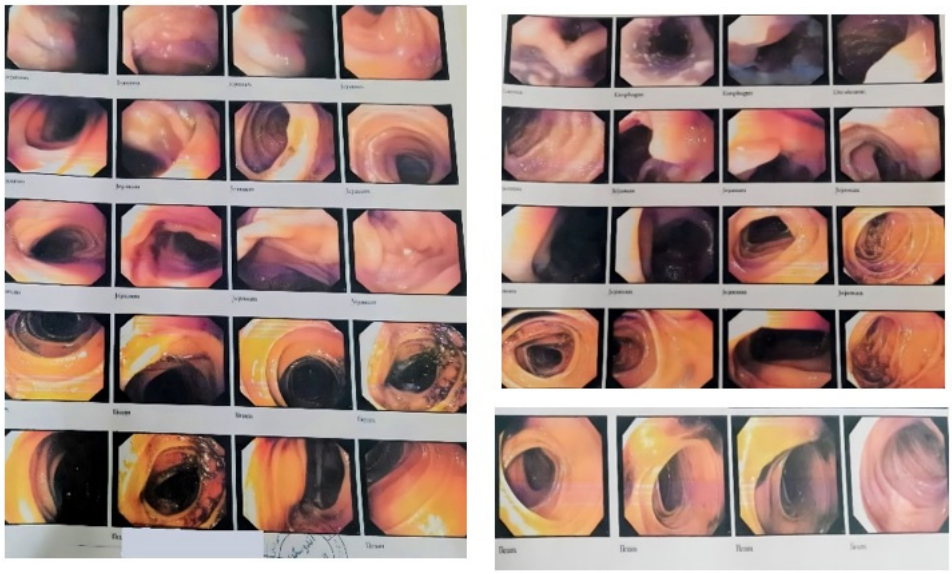

Fig. 4. Patient Enteroscopy

rectal bleeding and was subsequently discharged, currently in partial recovery (Table 1).

## Discussion

Wegener's disease is a multisystem disorder that most often affects the upper respiratory tract and kidneys. Several studies and case reports suggest that Wegener's disease presents with a wide range of symptoms across different systems. The present case involved a 65-year-old man who presented to the hospital with rare gastrointestinal symptoms, such as abdominal pain. During hospitalization, he experienced decreased urinary output and impaired kidney function, but the main reason for his hospital visit was gastrointestinal symptoms.

In contrast to the 2013 case reported by Sinnott et al., in which the main complaints were diarrhea and rectal bleeding, these symptoms in the present case appeared after 20 days. Additionally, in Sinnott's study, the patient had congestion and epistaxis; however, in the present case, the involved systems included the digestive tract, kidney, and skin. No family history

**Table 1.** Results of the patient's laboratory test from diagnosis to complete recovery

| Date (Gregorian) | WBC | Hb | Na | K | Ca | P | Cr | Urea |
|---|---|---|---|---|---|---|---|---|
| **2023/6/28** | 14.7 | 15.1 | 137 | 3.5 | - | - | 0.9 | 41 |
| **2023/7/1** | 14.3 | 14.3 | 136 | 3.64 | 8.5 | 4.9 | 2.64 | 115 |
| **2023/7/3** | - | - | 124 | 3.9 | - | - | 3.51 | 187 |
| **2023/7/4** | 11.4 | 11.7 | 121 | 4.2 | 7 | 8.2 | 4.3 | 170 |
| **2023/7/5** | 12.5 | 9.4 | 125 | 4.7 | - | - | 4.4 | 214 |
| | 9.9 | 7.8 | 128 | 5.5 | - | - | 3.8 | 168 |
| **2023/7/7** | 11.7 | 7.6 | 129 | 5.3 | - | - | 5 | 223 |
| **2023/7/8** | 13.3 | 7.5 | 134 | 5.1 | - | - | 4.1 | 195 |
| **2023/7/11** | 16.3 | 6.9 | 138 | 4.5 | - | - | 3.6 | 151 |
| **2023/7/12** | 23.6 | 7.5 | 134 | 4.4 | 7.5 | 9.1 | 3.5 | 167 |
| **2023/7/13** | 11.7 | 7.2 | 135 | 3.7 | 7.1 | - | 2.6 | 163 |
| **2023/7/14** | 10.3 | 5.7 | 134 | 3.7 | 7.2 | - | 1.9 | 147 |
| **2023/7/15** | 7 | 6.6 | 137 | 3.9 | 7.6 | - | 1.4 | 113 |
| **2023/7/17** | 10.2 | 6.5 | 144 | 3.8 | 7.1 | 3.1 | 1 | 87 |
| **2023/7/18** | 8.4 | 6.6 | 152 | 3.5 | 7.1 | - | 1 | 84 |
| **2023/7/19** | 7.5 | 5.5 | 149 | 3.6 | 6.5 | 2.8 | 0.9 | 65 |
| **2023/7/20** | 8.1 | 7.6 | 150 | 2.7 | 6.7 | 1.8 | 0.8 | 50 |
| **2023/7/21** | 6.3 | 9 | 151 | 3.1 | 8.1 | - | 0.9 | 40 |
| **2023/7/22** | 5.6 | 7.5 | 140 | 3.6 | 7.2 | - | 0.7 | 26 |
| **2023/7/25** | 8.3 | 9.7 | - | - | - | - | 0.7 | 16.1 |
| **2023/8/2** | 8.3 | 7.6 | 138 | 3.4 | - | - | 0.9 | 35 |
| **2023/8/27** | 9.6 | 10.2 | 145 | 4.6 | 9.9 | 4.6 | 0.6 | 4.6 |

of gastrointestinal disease was reported in either patient, but granulomas were observed on chest X-ray in both cases [13].

The patient described in the 2021 study by Andrada et al. was a 45-year-old man with Wegener's granulomatosis with orbital involvement. Medicines such as cyclophosphamide, methotrexate, rituximab, azathioprine, and sulfamethoxazole were also used for recovery. In the case mentioned in this study, the individual's symptoms were not consistent with those of Andrada's study because no symptoms of eye involvement were observed [3].

In the study by Karimifar et al. in 2010, a 20-year-old female patient was referred for otitis media and sinusitis symptoms. After some time, the symptoms of arthralgia increased, as did the skin manifestations in the form of a rash. There were maculopapular lesions distal to both legs. Additionally, 20 days later, the patient had gastrointestinal symptoms in the form of epigastric pain with severe vomiting. The mentioned case and the case reported in the present study have different symptoms upon arrival, but they are similar in terms of the occurrence of digestive symptoms and the involvement of this system [8].

The next reported case in the study by Vitito et al. in 2021 initially presented with symptoms of hematochezia, and colonoscopy showed diffuse involvement of the colon with erosion and ulceration, while a biopsy of the ulcer showed a nonspecific ulcer without malignancy or granuloma formation. The urine sample showed a large amount of red blood cells (RBCs), and the c-ANCA test was also positive, which led to the diagnosis of Wegener's granulomatosis, and corticosteroids were used for treatment. Vitito et al.'s study was similar to the present study in terms of gastrointestinal symptoms, intermittent abdominal pain, and melena, but in addition to the involvement of the digestive system, the skin and kidney systems were also involved in the present study [14].

## Conclusion

Wegener's granulomatosis is a systemic vasculitis that can involve multiple organs. When it affects the digestive system, it may lead to abdominal pain, melena, bleeding, and even shock. For suspicious patients, procedures such as endoscopy, colonoscopy, and biopsy are necessary. Corticosteroids and plasmapheresis may be effective treatment options, but surgery or clinical enteroscopy are sometimes required to diagnose and control bleeding. With early diagnosis and appropriate treatment, many patients can achieve partial recovery. Current research is

devoted to improving diagnostic methods and developing more targeted treatments with minimal side effects.

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## Ethical Considerations

The authors confirm that all procedures were conducted in accordance with the relevant guidelines and regulations, and that the participants signed a written consent form to participate in the study. The participant was also assured that all personal information, including his name, would be kept confidential.

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### Conflict of Interests

The authors declare that there are no conflicts of interest related to this study.

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