

Case Report

# Successful Use of Haloperidol for Persistent Hiccups Unresponsive to Baclofen After Esophageal Stenting

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## Abstract

**Background:** Hiccups are common and typically self-limiting condition but can become persistent or intractable in certain conditions. Hiccups commonly occur due to rapid gastric distension, which is often triggered by quickly eating a large meal or consuming carbonated drinks. Other contributing factors include alcohol intake, spicy foods, smoking, and various irritants affecting the gastrointestinal or respiratory systems. Oesophageal stenting is a recognized, though rare, cause of persistent hiccups, usually managed effectively with baclofen. **Case Presentation:** We report a case of a 64-year-old man with a refractory corrosive oesophageal stricture who developed persistent hiccups following placement of a fully covered self-expandable metallic stent (fcSEMS) for oesophageal stricture management. Despite treatment with proton pump inhibitors, prokinetics, baclofen, and chlorpromazine, his symptoms persisted. Initiation of oral haloperidol (1 mg three times daily) led to rapid and complete resolution of hiccups within 36 hours, with no recurrence. Haloperidol continued for two weeks, then gradually tapered over the following two weeks before being discontinued. The stent was removed after four weeks, revealing successful stricture dilatation. **Conclusion:** Haloperidol may be considered as a therapeutic option for managing persistent hiccups induced by oesophageal stenting when baclofen fails. To the best of our knowledge, this is the first reported case of successful haloperidol use in such a scenario.

## Keywords

Persistent Hiccups, Baclofen, Haloperidol, Oesophageal Stenting

## 1. Introduction

Hiccups are characterized by the distinctive sound produced when the glottis suddenly closes following repeated, involuntary, and spasmodic contractions of the respiratory muscles [1]. Hiccups occur due to irritation of the reflex arc, which can be triggered by lesions along its pathway, medica-

tions, or various systemic conditions. The most common cause is rapid gastric distension, typically from eating a large meal quickly or consuming carbonated beverages [2]. Oesophageal stenting can also induce hiccups through various mechanisms. Baclofen is considered an effective treatment for

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**Received:** 8 May 2025; **Accepted:** 19 May 2025; **Published:** 18 June 2025

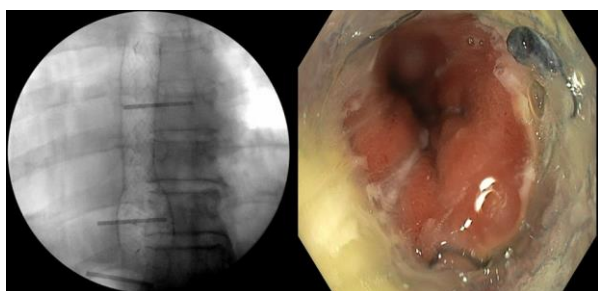


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persistent or intractable hiccups following oesophageal stenting [3]. We report a case of baclofen-refractory persistent hiccups following oesophageal stenting for a refractory corrosive oesophageal stricture.

## 2. Case Description

64-year-old gentleman with a known case of refractory corrosive oesophageal stricture underwent multiple sessions of endoscopic CRE dilatation combined with steroid injections. Due to the persistent nature of the stricture, and after thorough discussion with the patient, a fully covered self-expandable metallic stent (fcSEMS) was placed across the stricture, extending from 28 cm to 32 cm from the upper incisors, with the distal end of the stent positioned above the gastroesophageal junction (Figure 1). Following oesophageal stenting, the patient developed hiccups on the same day. He was started on pantoprazole (40 mg twice daily for 2 days) and metoclopramide (30 mg daily for 2 days). His metabolic parameters, including liver and kidney function tests, creatinine, and serum electrolytes, were all within normal limits. A chest CT confirmed proper stent positioning with no evidence of oesophageal perforation, mediastinitis, or free air under the diaphragm. Repeat upper gastrointestinal endoscopy on day 3 showed the stent remained correctly positioned above the gastroesophageal junction. As there was no improvement in the hiccups, baclofen 10 mg three times daily was initiated on day 3. However, after 48 hours of baclofen therapy, the patient showed minimal improvement. On day 6, oral chlorpromazine (25 mg three times daily) was added. Due to lack of response to proton pump inhibitors, prokinetics, baclofen, and chlorpromazine, oral haloperidol (1 mg three times daily) was started on day 8. Remarkably, his symptoms began to improve within 12 hours of starting haloperidol and completely resolved within 36 hours, with no recurrence of hiccups. He was discharged on day 10 with a regimen of PPI and haloperidol. Haloperidol was continued for 2 weeks, then gradually tapered over the next 2 weeks and discontinued after 4 weeks. The esophageal fcSEMS was also removed after 4 weeks, demonstrating successful dilatation of the stricture.



**Figure 1.** Fluoroscopy image showing oesophageal stent deployed above the GEJ and endoscopic image showing the stent seen above the GEJ.

## 3. Discussion

Hiccups are a common experience for most people at some point in their lives. Also known as singultus, the term "singultus" comes from the Latin word meaning "the act of catching one's breath while sobbing," which refers to the characteristic "hiccup" sound [4]. Hiccups typically occur at a rate of 4-60 per minute and are generally self-limiting. They are classified based on their duration into acute, persistent, and intractable types. Acute hiccups are transient, lasting less than 48 hours, while persistent hiccups last longer than 48 hours. Hiccups that persist for more than one month are considered intractable [5].

The mechanism of hiccups results from irritation of the reflex arc, which may be triggered by lesions along its pathway, medications, or systemic conditions. The reflex arc includes afferent signals from the phrenic, vagus, and sympathetic nerves (T6-T12) that reach the central processing areas in the midbrain (periaqueductal gray and subthalamic nuclei). Efferent pathways involve motor fibers from the phrenic nerve to the diaphragm and the accessory nerve to the intercostal muscles. Additionally, efferent motor fibers in the recurrent laryngeal branch of the vagus nerve cause glottal closure. Several neurotransmitters, including GABA, dopamine, serotonin, histamine, epinephrine, and acetylcholine, play a role in the hiccup reflex [6].

The most common cause of acute transient hiccups is rapid gastric distension, often resulting from eating a large meal quickly or drinking carbonated beverages. Other triggers include alcohol, spices, smoking, and various irritants to the gastrointestinal or respiratory systems. Persistent and intractable hiccups can be particularly problematic for both the patient and clinician, potentially leading to complications such as dehydration, insomnia, depression, and, though rarely, even death. Therefore, persistent or intractable hiccups warrant a thorough investigation for underlying organic causes. A comprehensive review of the gastrointestinal, cardiovascular, pulmonary, and central nervous systems, along with an assessment of recent medications and procedures, is essential.

Fully covered esophageal self-expandable metallic stents (fcSEMSs) are used in the management of refractory benign esophageal strictures, tracheoesophageal fistulas, esophageal perforations, and esophageal malignancies [7]. In the present case, an fcSEMS was placed to treat a refractory corrosive esophageal stricture. Hiccups develop in approximately 1-2% of patients following esophageal stenting [8, 9]. Persistent or intractable hiccups following esophageal stenting are a rare complication. To date, only a few case reports have documented persistent hiccups induced by the placement of an esophageal endoprosthesis [10, 3, 1, 11]. Oesophageal SEMS can cause hiccups by inducing oesophageal distension or, when the gastroesophageal junction is involved, through reflux or diaphragmatic irritation [1]. In our case, we believe that expansion of the stent stimulated the afferent limb of the hiccup reflex arc, leading to persistent hiccups.

Acute transient hiccups are common and typically resolve without intervention. Management of persistent or intractable hiccups includes a variety of options such as physical maneuvers (breath holding, breathing into a paper bag, sipping cold water, swallowing a teaspoon of dry sugar), as well as pharmacologic therapies like proton pump inhibitors, metoclopramide, baclofen, gabapentin, chlorpromazine, and haloperidol. In some cases, regional anesthesia of the phrenic nerve under ultrasound guidance may also be considered [12]. In the three case reports of esophageal stent induced intractable hiccups in the literature were successfully managed with baclofen and another case managed with regional anesthesia of phrenic nerve. But in our case the patient was not responding to conventional treatment (PPI and prokinetics), baclofen, and chlorpromazine so we tried haloperidol, which is a first-generation typical antipsychotic, reported as efficacious in small case reports [13]. It acts by blocking the dopamine D2 receptors in the brain. In our case, haloperidol appears to be the most efficacious agent in the treatment of persistent hiccups. This is the first case report of oesophageal stent induced hiccups not responding to baclofen managed successfully with oral haloperidol.

## 4. Conclusion

Persistent or intractable hiccups are a potential adverse effect of oesophageal stenting. Esophageal distension, acid reflux and diaphragmatic irritation are the possible explanations for hiccups in case of esophageal stenting. Baclofen is the commonly used medication for persistent or intractable hiccups in case of esophageal stenting. Haloperidol is also effective drug for management of persistent hiccups and may also consider in the treatment of stent-induced hiccups refractory to baclofen therapy as in our case.

## Abbreviations

fcSEMS	Fully Covered Self-expandable Metallic Stent
PPI	Proton Pump Inhibitors
CRE	Controlled Radial Expansion
GEJ	Gastroesophageal Junction

## Informed Consent

Informed consent was taken and signed from the patient for publication.

## Author Contributions

**Srinu Deshidi:** Conceptualization, Investigation, Validation, Writing - original draft, Writing - review & editing.

**Gaurav Mahajan:** Data curation, Writing - original draft, Writing - review & editing.

**Rakesh Ram:** Data curation, Validation, Writing - review

& editing.

**Viswanath Kamishetty:** Data collection, Writing - review & editing.

**Venu Gongati:** Investigation, Data curation, Writing - review & editing.

**Gongala Harshvardhan Reddy:** Investigation, Data curation.

**Bhaskar Kante:** Supervision, Writing - review & editing.

**Sreekanth Appasani:** Supervision, Writing - review & editing.

## Funding

No grant from a public, private or nonprofit organization.

## Conflicts of Interest

The authors declare no conflicts of interest.

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