

**Case Report**

# Decompression tube insertion using double balloon endoscopy in a case following initial difficulty in passing the duodenojejunal junction

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## Abstract

In a patient in whom it was initially difficult to pass the duodenojejunal junction, a long decompression tube was easily inserted using double balloon endoscopy. The patient was a 16-year-old male with bowel obstruction who had undergone proctocolectomy for ulcerative colitis. A double balloon endoscope was inserted into the jejunum about 50 cm from the ligament of Treitz. A stiff hydrophilic-coated guidewire, 350 cm in length, was inserted into the deep jejunum through the accessory channel of the endoscope. A long 16Fr silicon tube was easily inserted over the guidewire into the deep jejunum through the nose. The obstruction was successfully decompressed without laparotomy. This technique is a useful method that can be used in patients in whom other techniques of decompression tube insertion fail; it allows the possibility of directly diagnosing the cause of the bowel obstruction without prior decompression.

(Key words: long decompression tube, double balloon endoscopy, over the guidewire)

## Introduction

It is sometimes difficult to insert a long decompression tube into the deep jejunum using the standard pushing method since there may be difficulty passing the pyloric ring or the duodenojejunal junction. The upper gastrointestinal endoscopy-assisted long tube insertion method is often used and has a high success rate; however, it has obvious limitations<sup>1-3</sup>. Using double balloon endoscopy, a long decompression tube was easily inserted in a patient in whom it was initially difficult to pass the duodenojejunal junction.

## Case report

The patient was a 16-year-old male with small bowel obstruction who had undergone proctocolectomy for ulcerative colitis. Decompression tube insertion was attempted twice about an hour and failed both times without passing the duodenojejunal junction due to a malposition caused by an operative adhesion. With the patient under sedation, a double balloon endoscope was inserted into the jejunum about 50 cm from the duodenojejunal junction while suctioning air and enteric fluid. The endoscope was passed with

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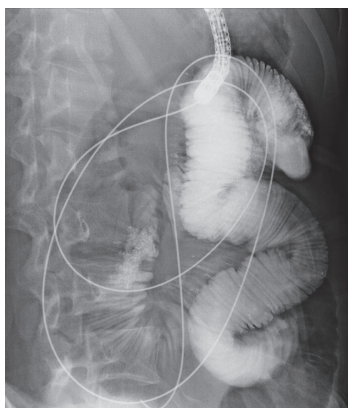


Figure1. A stiff, hydrophilic-coated guidewire was inserted into the jejunum through the accessory channel of the endoscope.



Figure2. A long silicon tube was easily inserted over the guidewire into the deep jejunum.

some difficulty due to kinking of the gut at the ligament of Treitz. A stiff hydrophilic-coated guidewire, 350 cm in length, was inserted into the deep jejunum through the accessory channel of the endoscope (Fig. 1). The endoscope was removed, leaving the guidewire in the jejunum. The end of the wire that protruded from the mouth was pulled out through a nostril using a soft nasogastric tube. A long 16Fr silicon tube was easily inserted over the guidewire into the deep jejunum through the nostril (Fig. 2). The total elapsed time for the procedure was 30 minutes. The obstruction was successfully decompressed without the need for laparotomy. The patient was discharged on the 27<sup>th</sup> day after admission following an uneventful course. One year after discharge, the patient is in good condition.

## Discussion

Flexible endoscopy is widely used to place a long decompression tube in cases of small bowel obstruction when there is difficulty passing the pyloric ring<sup>4</sup>. The following method is used. A 5-cm suture is tied to the top of the tube. The tube is inserted into the stomach. An endoscope is inserted into the stomach. Endoscopic biopsy forceps are used to grasp the suture at the tip of the tube. The endoscope with the tube in tow is advanced into the duodenum. The suture is released, and the scope is removed. Then, the tube is advanced in the usual manner. A prior report indicated that, in many cases, passage to the duodenojejunal junction or beyond is possible by using this technique with a 160-cm endoscope. However, this technique with a standard endoscope is potentially ineffective and carries the risk of perforation in patients with severe adhesions located at the ligament of Treitz or in the upper jejunum, as in this case.

The double balloon method has made it possible to insert an endoscope into the deep jejunum or farther. Its flexibility enables the endoscope to pass the sites of intestinal adhesion and to safely advance farther. There are reports of double balloon endoscopic examination done in cases with bowel obstruction after decompression or no decompression using a long tube<sup>5,6</sup>. This endoscopic procedure is considered to be a safe method in bowel obstruction cases with bowel decompression. Perforations have not been reported in patients with bowel obstruction during or after endoscopic-assisted long tube insertion. However, there are spontaneous perforation cases in patients with intestinal obstruction caused by malignant

tumor<sup>7,8</sup>. It is important to decompress the bowel for endoscopic procedure in bowel obstruction cases, particularly in patients with malignant bowel obstructions, including colonic obstructions.

With double balloon endoscopy, due to the presence of the overtube and the balloons, a long tube cannot be inserted by grasping the suture at the tip using the biopsy forceps. This problem was solved by using the over-the-guidewire method<sup>9</sup>; the tube could be inserted deeper than by using the conventional method due to intestinal shortening and a stretched guidewire. The tube is more effective for decompression when it is inserted deeper into the intestine.

Decompression tube insertion using the double balloon endoscopy method raises the possibility of directly diagnosing the cause of bowel obstruction without prior decompression. We recently treated a patient with small intestinal carcinoma who had a complete bowel obstruction. In the presence of the bowel obstruction, double balloon endoscopy was done to diagnose the lesion (including taking a biopsy), to mark the lesion for laparotomy, and to place a long decompression tube. All three were achieved successfully and safely in a short period of time.

Using the double balloon endoscopic approach as reported here, a long decompression tube could be easily inserted into the deep jejunum without complications.

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## ダブルバルーン内視鏡下にイレウス管挿入を要した癒着性イレウスの1例

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### 要 約

症例 16歳男性 潰瘍性大腸炎にて全結腸切除・回腸瘻造設術の既往あり。癒着性イレウスの診断で入院。2日間にわたりX線透視下にイレウス管挿入を約1時間ずつかけて試みるもトライツ靭帯よりチューブが進まなかった。そのためダブルバルーン内視鏡下でのイレウス管挿入を施行した。ダブルバルーン内視鏡を十二指腸から空腸へ貯留した腸液とガスを吸引しながら挿入した。トライツ靭帯付近は癒着のため屈曲が強く内視鏡の挿入がやや困難であつ

た。内視鏡を空腸内に十分深く挿入後、ガイドワイヤーを留置してスコープを抜去、ガイドワイヤーを胃管を使用し鼻から出したあと、ガイドワイヤーガイド下にイレウス管を空腸内に留置した。その後腸管減圧が成功し27日後退院した。本法はトライツ靭帯や空腸の癒着などのため通常の方法でイレウス管挿入が困難な場合にチューブを深部挿入できる点で大変有用である。

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