

# Three Surgical Approaches of Laparoscopic Splenic Flexure Mobilization

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Splenic flexure mobilization during laparoscopic colorectal surgery, which is used for elongation of the remaining colon after resecting the left colon or rectum, is sometimes essential for making a secure anastomosis without tension. However, laparoscopic splenic flexure mobilization is often time consuming and technically demanding, particularly in obese patients with severe adhesion. Therefore, three surgical approaches are introduced to make the procedure easier according to the method of entering the lesser sac: anterior approach, inferio-medial approach, and lateral approach.

**Keywords:** Laparoscopy, Colorectal surgery, Colon, Splenic flexure, Lesser sac

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## INTRODUCTION

Laparoscopic surgery has been accepted as an alternative surgical option as well as a better surgical option for treating colorectal cancer based on the results of multicenter prospective randomized trials. Patients who undergo colorectal laparoscopic surgery generally experience less pain, faster recovery and acceptable oncological outcomes.<sup>1-3</sup> One of the most disastrous complications after colorectal surgery is anastomotic leakage. Many factors are associated with anastomotic leakage, among which tension-free anastomosis is one of the most important. Splenic flexure mobilization, which is an essential surgical procedure to elongate the left colon, is the only way to induce tension free anastomosis. Accordingly, colorec-

tal surgeons should be familiar with splenic flexure mobilization; however, laparoscopic splenic flexure mobilization can be time-consuming and technically demanding. Here, three surgical approaches (a. anterior, b. inferio-medial, c. lateral) for laparoscopic splenic flexure mobilization are introduced.

## PROCEDURE

Although splenic flexure mobilization occasionally looks complicated, it consists of five simple procedures: 1, division of the line of Toldt (dividing the lateral peritoneal attachment); 2, division of the gastrocolic ligament (dividing the greater omentum and transverse colon, then entering the lesser sac); 3, division of the splenocolic ligament; 4, division of the phreno-

colic ligament; 5, division of the pancreaticocolic ligament (division of the transverse mesocolon and inferior border of the pancreas).

Based on the method of entering the lesser sac, laparoscopic splenic flexure mobilization can be categorized into three surgical approaches: A, anterior approach; B, inferio-medial approach; C, lateral approach.

Patients were placed in the supine position with reverse Trendelenburg and right down tilting position. After completion of inferior mesenteric artery (IMA) and inferior mesenteric vein (IMV) ligation and medial to lateral mesocolic dissection, the author started splenic flexure mobilization.

In the anterior approach, the lesser sac is entered from the anterior part by dividing the gastrocolic ligament first, while in the inferio-medial approach the lesser sac is entered from the inferior part by dividing the pancreaticocolic ligament first. In the lateral approach, the phrenocolic and splenocolic ligament is divided, after which the lesser sac is entered from the lateral part (see details in video).

## DISCUSSION

The only goal for splenic flexure mobilization is gaining enough length of the descending colon to enable tension-free anastomosis. These three surgical approaches of laparoscopic splenic flexure mobilization are feasible and safe. In general, surgeons can easily find the pancreas by continuing medial-to-lateral mesocolon dissection; however, in obese patients it can be difficult to find the pancreas using an inferior approach because of thick fat tissue around the pancreas. In such cases, it is easy to dissect the pancreas from the transverse mesocolon using an anterior approach. One of the complications in splenic flexure mobilization is splenic injury. To avoid splenic injury, surgeons do not make extensive traction of the splenic flexure colon because this could result in splenic laceration or omental bleeding. Surgeons usually stand on the right side of the patient and use the right side port as the working port.

However, laparoscopic instruments cannot always reach splenic flexure in patients with large bodies. In such cases, surgeons can easily reach splenic flexure by using a port placed in the left upper quadrant.

There is no gold standard surgical approach in terms of laparoscopic splenic flexure mobilization. The choice among the three surgical approaches described herein can be made depending on the patient's anatomical characteristics and surgeon's preference. However, more available surgical approaches are better for surgeons.

## CONFLICT OF INTEREST

None.

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