



The laparoscopic medial-to-lateral approach to the splenic flexure

J. Snider^{1,2} · R. Gay^{1,2} · A. Caycedo-Marulanda^{1,2,3}

Received: 18 May 2019 / Accepted: 17 June 2019 / Published online: 5 July 2019
© Springer Nature Switzerland AG 2019

Releasing the splenic flexure (SF) is of paramount importance when performing left-sided colorectal procedures. The principal justification for this maneuver lies in its potential to enable the creation of a tension-free colorectal anastomosis. In the current literature, there is no universal consensus about the necessity to release the SF in every patient [1].

There are different approaches to release the SF while using minimally invasive techniques. The medial-to-lateral approach is one feasible and elegant alternative which at the same time is complex and technically demanding [2], and many surgeons who perform colorectal anastomosis today are still unfamiliar with this approach. The medial-to-lateral technique has become our preferred method to dismantle the SF. The technique is shown in the attached video.

Important considerations for this approach include: (1) identification of the inferior mesenteric vein (IMV) close to the ligament of Treitz, followed by traction of the mesentery. (2) The peritoneum below the vein is incised and the retroperitoneal plane is developed using a combination of blunt and sharp dissection. (3) It is of extreme importance to identify the inferior edge of the pancreas and extend the dissection on the ventral aspect of this organ; otherwise, “digging” under the pancreas could lead to direct exposure and a potentially devastating injury of the splenic vein. (4) Dissection is continued by pushing the pancreas and Gerotta’s fascia down. One should remain aware of the deep location of the left renal vein. The pancreas has a distinct coloration, which could be difficult to discern from the surrounding tissue fat. (5) Integrity of the mesentery should be preserved,

considering that the blood supply in this area is provided by the different vascular arcades embedded in the mesenteric fat [3, 4]. (6) Entering the lesser sac from the infra-mesocolic approach is a desired consequence of dissection. (7) Division of the IMV is performed close the inferior edge of the pancreas. We consider that placing a gauze anterior to the pancreas and into the lesser sac is an extremely useful landmark for future dissection. (8) Attachments of the greater omentum to the transverse colon are taken with an energy device. (9) Entering the lesser sac from the supra-mesocolic approach is recognized by direct visualization of the gauze. (10) The root of the mesentery can be further dissected as per the surgeon’s discretion. Care needs to be taken, as the middle colic vessels will eventually be encountered [2, 5]. (11) The final step consists of taking the lateral attachments to connect with the medial-to-lateral dissection. Once the splenic flexure is down, one expects to see the spleen and the stomach; however, this does not always occur. Gerota’s fascia and also the pancreas are seen from above.

The discussion around the need to perform SF release in every case is beyond this video manuscript. The medial-to-lateral approach can be a safe and reliable option; however, it requires a significant degree of expertise. We firmly believe that this technique could be extremely useful for surgeons performing minimally invasive colorectal anastomosis.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval There was no required approval by the ethical review board, since there was no experimental procedures performed.

Informed consent The patient included in the study was formally and individually consented for the procedure. There was no need to obtain permission for publication, since there is no disclosure of personal information or any form of identifiers attached.

Electronic supplementary material The online version of this article (<https://doi.org/10.1007/s10151-019-02018-6>) contains supplementary material, which is available to authorized users.

✉ A. Caycedo-Marulanda
caycedomd@gmail.com

¹ Division of General Surgery, Department of Surgery, Health Sciences North, 65 Larch St Suite 308, Sudbury, ON P3G1L1, Canada

² Northern Ontario School of Medicine, Sudbury, ON, Canada

³ Colorectal Surgery North, Sudbury, ON, Canada

References

1. Chand M, Miskovic D, Parvaiz AC (2012) Is splenic flexure mobilization necessary in laparoscopic anterior resection? *Dis Colon Rectum* 55(11):1195–1197
2. Liang J-T, Lai H-S, Lee P-H (2005) Laparoscopic medial-to-lateral approach for the curative left hemicolectomy. *Dis Colon Rectum* 48(11):2142–2143
3. Fukuoka A, Sasaki T, Tsukikawa S, Miyajima N, Ostubo T (2016) Evaluating distribution of the left branch of the middle colic artery and the left colic artery by CT angiography and colonography to classify blood supply to the splenic flexure. *Asian J Endosc Surg* 10(2):148–153
4. Garcia-Granero A, Sánchez-Guillén L, Carreño O, Sancho Muriel J, Alvarez Sarrado E, Fletcher Sanfeliu D et al (2017) Importance of the Moskowitz artery in the laparoscopic medial approach to splenic flexure mobilization: a cadaveric study. *Tech Coloproctol* 21(7):567–572 (**5 ed**)
5. Matsumura N, Tokumura H, Saijo F, Katayose Y (2017) Strategy of laparoscopic surgery for colon cancer of the splenic flexure: a novel approach. *Surg Endosc* 32(5):2559 (**Springer US**)

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.