

# A Simple Technique for Safe Mesenteric Defect Closure Following Bowel Resection

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## INTRODUCTION

The closure of the mesenteric defect following bowel resection has traditionally been undertaken, especially in open surgery, in an attempt to prevent bowel herniation and subsequent strangulation. With the advent of laparoscopic surgery however, the value of this practice has been challenged and many surgeons do not routinely close the resultant mesenteric defect following laparoscopic bowel resection. Proponents of the former approach point to the risk of small bowel herniation through an open mesenteric defect, potentially leading to bowel obstruction and rarely to catastrophic mesenteric ischemia.<sup>[1]</sup> In support of this argument, several case studies have reported complications attributed to the nonclosure of the mesenteric defect; interestingly, these studies often relate to laparoscopy-assisted colostomies.<sup>[2-5]</sup> Conversely, opponents of the mesenteric defect closure advocate that such practice may result in the constriction of the bowel mesentery, inadvertent ligation of blood vessels and/or mesenteric hematoma formation and could, therefore, compromise the blood supply to the bowel anastomosis and lead to anastomotic dehiscence.<sup>[6,7]</sup> Here we propose a simple technique, applicable to both open and laparoscopy-assisted colectomies, that enables a quick closure of the mesenteric defect while minimizing the risk of blood vessel injury.

## ABSTRACT

The closure of the mesenteric defect following bowel resection remains controversial. Proponents of the intervention cite the risk of bowel herniation through an open mesenteric defect and subsequent bowel obstruction whereas supporters of the opposing view advocate that such practice may lead to inadvertent compromise of the bowel blood supply. We describe a novel technique that enables efficient mesenteric defect closure while minimizing the risk of blood vessel injury.

**Key words:** Closure, mesenteric defect, bowel resection



**Figure 1:** Following bowel resection, mesenteric vessels are ligated and the ligatures are left long



**Figure 2:** Long ligatures on either side of the mesenteric defect are tied together closing the defect

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## TECHNIQUE

Following bowel resection, the ligatures used for mesenteric vessel ligation are left long [Figure 1]. Once the bowel anastomosis is completed, the long ligatures on either side of the mesenteric defect are tied together closing the defect [Figure 2]. The ties are subsequently cut. Placement of extra sutures is not routinely required.

## DISCUSSION

The handling of the mesenteric defect following bowel resection remains a subject of debate. Unfortunately, there is paucity of high-quality data to inform surgical practice on this topic with much of the available evidence based on case reports and nonrandomized, observational studies. This report describes a simple technique that enables the closure of the mesenteric defect while minimizing the risk of inadvertent damage to the blood vessels supplying the bowel anastomosis. Our mesenteric defect closure technique represents an alternative to those previously reported in the literature, such as stapled closure or closure using a continuous running suture,<sup>[8,9]</sup> and is currently being evaluated in a prospective study undertaken in our unit.

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