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VIDEO FORUM

Possible effects of height of ligation of the inferior mesenteric vein on venous return of the colorectal anastomosis: the venous trunk theory

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Poor arterial vascularization is an independent predictor of anastomotic failure after rectal resection with colorectal anastomosis [1]. However, there are little data available about the role of venous ischemia in anastomotic failure and how the risk of venous ischemia can be reduced. Ligation of the inferior mesenteric vein (IMV) makes it possible to gain length and to reduce the tension of the colorectal anastomosis [2]. Nevertheless, some authors state that this might be responsible for increased venous stasis, thereby increasing the risk of venous ischemia of the colorectal anastomosis [3]. Usually, little attention is paid to the correlation between the height of IMV ligation and the subsequent risk of developing venous ischemia. In this video, we show how to ligate the IMV to provide a colorectal anastomosis with an ideal venous return.

In the video, a cadaver dissection is performed at the Department of Human Anatomy and Embryology of the University of Valencia. The cadaver was obtained following body donation legislation and regulations. The splenic flexure, the left colon, and the sigmoid colon are mobilized. A detailed demonstration of the arterial and venous vascularization of the left colon is shown. The venous return drains in two ways: via the middle colic vein (through the marginal arch), and the IMV. The main tributary veins of the IMV are the sigmoid vein and the left colic vein. Usually, the IMV and the sigmoid vein join in a single venous trunk before draining into the left colic vein [4]. An anterior resection of the rectum with high tie of the inferior mesenteric artery (IMA) is simulated. The left colic artery and IMV are ligated near to the IMA stump. A second ligation of the IMV is performed, distal to the left colic vein, at the lower border of the pancreas body. This allows for preserving a "venous tripod", formed by the IMV, the left colic vein, and the sigmoid vein. The theory has been postulated by the senior author (EGG). We refer to this resulting structure as the "Garcia-Granero venous trunk". Methylene blue dye is injected into the IMV, showing that the flow in the left colic vein can potentially be reversed, eventually resulting in better drainage of the plasty. We hypothesize that a similar phenomenon could occur in vivo.

Three real cases are presented (2 open procedures and 1 laparoscopic procedure) that illustrate how the ligation is performed.

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Compliance with ethical standards

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

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