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Achievement of haemostasis following a double-stapled (Knight-Griffen) anastomosis using the transanal endoscopic

Questa è la Versione finale referata (Post print/Accepted manuscript) della seguente pubblicazione:

Original Citation:

Achievement of haemostasis following a double-stapled (Knight-Griffen) anastomosis using the transanal endoscopic operating system - a video vignette / Coratti F.; Maggioni C.; Mongelli C.; Nelli T.; Cianchi F.. - In: COLORECTAL DISEASE. - ISSN 1462-8910. - ELETTRONICO. - (2019), pp. 0-0. [10.1111/codi.14896]

Availability:

This version is available at: 2158/1180806 since: 2021-01-03T11:10:29Z

Published version:

DOI: 10.1111/codi.14896

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the procedure consisted of freshening the margin of the fistula (Video S1). Following this, a continuous sutured closure was performed with a resorbable self-locking monofilament suture. Finally, a second layer was used to reinforce the repair using another monofilament, slowly resorbable, suture. After 6 months there has been no recurrence of the fistula.

Postoperative rectovaginal fistulas may be a complication of surgery for rectal cancer and, if they do occur, may be further complicated if preoperative radiotherapy has been employed. An individualized approach may be necessary to achieve successful closure. The TEO system can be a valuable aid but must be used by experienced surgeons.

Conflict of interests

There are no conflicts of interest to declare.

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Received 22 September 2019; accepted 8 October 2019; Accepted Article online 6 November 2019

References

- 1 Vogel JD, Johnson EK, Morris AM *et al.* Clinical practice guideline for the management of anorectal abscess, Fistula-in-Ano, and rectovaginal fistula. *Dis Colon Rectum* 2016; **59**: 1117–33.
- 2 Komori K, Kinoshita T, Oshiro T *et al.* Surgical strategy for rectovaginal fistula after colorectal anastomosis at a high-volume cancer center according to image type and colonoscopy findings. *Anticancer Res* 2019; **39**: 5097–103.
- 3 Woo IT, Park JS, Choi GS, Park SY, Kim HJ, Lee HJ. Optimal strategies of rectovaginal fistula after rectal cancer surgery. *Ann Surg Treat Res* 2019; **97**: 142–48.
- 4 Fu J, Liang Z, Zhu Y, Cui L, Chen W. Surgical repair of rectovaginal fistulas: predictors of fistula closure. *Int Urogynecol J* 2019; **30**: 1659–65.
- 5 DeLeon MF, Hull TL. Treatment strategies in Crohn's-associated rectovaginal fistula. *Clin Colon Rectal Surg* 2019; **32**: 261–267.
- 6 Matano Y, Zianne M, Omura H, Hayashi N, Miwa K. Successful endoscopic closure of a refractory postoperative rectovaginal fistula. *Endosc Int Open* 2019; **7**: E796–99.

Supporting Information

The video may be found in the online version of this article and also on the Colorectal Disease Journal YouTube and Vimeo channels:

Video S1. Treatment of rectovaginal postanastomotic fistula with a transanal endoscopic operation.

Achievement of haemostasis following a double-stapled (Knight–Griffen) anastomosis using the transanal endoscopic operating system – a video vignette

doi:10.1111/codi.14896

Dear Editor,

Postoperative colorectal anastomotic bleeding is not uncommon following colonic surgery. Endoscopic procedures are usually safe, efficient and successful. The use of endoscopic clips or direct injection of sclerosing agents guarantees accurate haemostasis. Endoscopic electrocoagulation may also be used to deal with anastomotic haemorrhage [1–5].

We present a case of a patient undergoing a sigmoid colectomy for diverticulosis. On the first postoperative day, bleeding occurred from the double-stapled (Knight–Griffen) anastomosis. Initial management was with endoscopic clips but further bleeding occurred after 12 h.

At this stage, we decided to use the transanal endoscopic operating (TEO) system. With the patient in the supine position, the bleeding point was identified and a continuous suture used to under-run the area in question, using a resorbable self-locking monofilament suture. This was successful with no recurrent bleeding.

The TEO system can be an additional valuable aid but must be used by experienced surgeons.

Conflicts of interest

There are no conflicts of interest to declare.

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Received 22 September 2019; accepted 8 October 2019; Accepted Article online 8 November 2019

References

- 1 Mangam S, Marzouk D. A simple, safe and effective bedside technique to achieve haemostasis in serious colorectal anastomotic bleeding. *Ann R Coll Surg Engl* 2014; **96**: 249.
- 2 Martínez-Serrano MA, Parés D, Pera M *et al.* Management of lower gastrointestinal bleeding after colorectal resection and stapled anastomosis. *Tech Coloproctol* 2009; **13**: 49–53.

- 3 Mari G, Costanzi A, Crippa J *et al.* Endoscopic treatment of anastomotic bleeding in laparoscopic colorectal surgery. *Chirurgia (Bucur)*. 2019; **114**: 295–9.
- 4 Cirocco WC, Golub RW. Endoscopic treatment of postoperative hemorrhage from a stapled colorectal anastomosis. *Am Surg* 1995; **61**: 460–3.
- 5 Besson R, Christidis C, Denet C *et al.* Management of postoperative bleeding after laparoscopic left colectomy. *Int J Colorectal Dis* 2016; **31**: 1431–6.

Supporting Information

The video may be found in the online version of this article and also on the Colorectal Disease Journal YouTube and Vimeo channels:

Video S1. Achievement of haemostasis following a double-stapled (Knight–Griffen) anastomosis using the transanal endoscopic operating system.

Venous congestion and near-infrared perfusion angiography in colorectal surgery – a video vignette

doi:10.1111/codi.14897

Dear Editor,

Arterial inflow insufficiency is a well-recognized threat to a colorectal anastomosis. Venous congestion is less well described but can also jeopardize healing. While there has been some work defining its importance for upper gastrointestinal anastomosis [1], and some authors have tried to factor in its presence as a risk factor for postoperative recovery following anterior resection [2], abnormalities of segmental outflow can be difficult to recognize and react to intra-operatively.

Although fluorescence angiography using near-infrared (NIR) laparoscopy with systemic indocyanine green (ICG) administration is becoming increasingly commonplace as an intra-operative decision-support measure, it does not completely eliminate anastomotic complications [3]. Some experts have already pointed to a potential limitation in its use in that the presence of ICG alone in a segment of bowel is not sufficient in itself to indicate adequate perfusion [4]. Dynamic inflow is important for one to be fully confident of normal perfusion kinetics, although this can be difficult for the human observer as it requires one to notice a rapid change in signalling within the region of interest compared with another area of normal control elsewhere on the same screen. This may also explain how misinterpretation of the signal can potentially occur and so underlie why some fluorescent anastomoses still leak postoperatively. While change in the microbiome can be

another factor contributing to complications in convalescence, commensal bacteria are phenotypically switch-activated by tissue injury, including any bowel with impaired perfusion remaining after surgery [5]. Correct control of arterial and venous perfusion is therefore a necessary standard to allow proper assessment and identification of the contribution of the microbiome *in vivo*.

In this video (Video S1 in the online Supporting Information), we show the occurrence and intra-operative correction of venous ischaemia during a laparoscopic anterior resection in a man with sigmoid cancer that was confirmed by postoperative histology. We demonstrate the hallmark characteristics of this phenomenon as seen in both white light and NIR laparoscopy (in short, regarding the NIR signal there is slow and patchy ICG inflow initially with unusual signal persistence in the affected segment following clearance from adjacent unaffected intestine). These subtle signs indicate why a reliable means of quantitative objective dynamic measurement is required to get the most out of interpretative technology. With specific respect to NIR–ICG, computer vision analytics including, potentially, machine learning-supported decision-nudging may usefully provide this in conjunction with existing hardware surgical imaging platforms [6].

Conflicts of interest

MFK has no conflicts of interest to declare. RAC receives speaker fees from Stryker and holds educational and surgical development grant funding from Intuitive and with IBM.

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Received 20 August 2019; accepted 18 October 2019; Accepted Article online 8 November 2019

References

- 1 Kamiya K, Unno N, Miyazaki S *et al.* Quantitative assessment of the free jejunal graft perfusion. *J Surg Res* 2015; **194**: 394–9.
- 2 Sujatha-Bhaskar S, Jafari MD, Hanna M *et al.* An endoscopic mucosal grading system is predictive of leak in stapled rectal anastomoses. *Surg Endosc* 2018; **32**: 1769–75.
- 3 Ris F, Liot E, Buchs NC *et al.* Near-infrared anastomotic perfusion assessment network VOIRMulticentre phase II trial of near-infrared imaging in elective colorectal surgery. *Br J Surg* 2018; **105**: 1359–67.
- 4 Quero G, Lapergola A, Barberio M *et al.* Discrimination between arterial and venous bowel ischemia by computer-assisted analysis of the fluorescent signal. *Surg Endosc* 2019; **33**: 1988–97.