



Invited Commentary

Short-term efficacy of transvaginal specimen extraction for right colon cancer based on propensity score matching: A retrospective cohort study



Over the past 10–15 years, SILS (Single-Incision Laparoscopic Surgery), NOTES (Natural Orifice Transluminal Endoscopic Surgery), and NOSES (Natural Orifice Specimen Extraction) have fueled the interest in research and expanded the potential technical options of minimally invasive colorectal surgery. Now that the debate about safety and effectiveness of laparoscopic versus open surgery is over, attention has been turned on these innovations to verify whether, by minimizing the impact of laparoscopy on the abdominal wall, further pain reduction, improved patient's comfort, superior cosmesis, and reduced morbidity can be achieved. Trans-vaginal specimen retrieval has been regarded as a logical final step of the laparoscopic right colectomy as soon it became clear that the total intra-corporeal anastomosis is feasible and has several advantages compared to the extra-corporeal anastomosis [1,2]. Until this key technical advancement, the options for the surgeon were to enlarge a port site, or to use a separate mini-laparotomy or Pfannestiel incision [3]. Potential advantages of combining multi-portal laparoscopy with intra-corporeal anastomosis and transvaginal specimen retrieval are: 1) the surgeon maintains triangulation of instruments (the “eye” between the “hands”); 2) postoperative pain, surgical site infections, and incidence of incisional hernia can be decreased by avoiding a mini-laparotomy to perform the extra-corporeal anastomosis and extract the specimen; 3) the potential for post-colpotomy adhesion formation appears to be low [4].

Hu et al. [5] performed a comparative study with 62 patients matched by propensity score method to remove confounders and balance the characteristics of two groups of patients undergoing laparoscopic right colectomy. The results of this study confirm that transvaginal specimen retrieval significantly reduced the incidence of complications, ileus, and postoperative hospital stay. Also, pain scores and analgesia requirements were significantly lower, and patients were more satisfied because of improved cosmesis. Interestingly, the Pelvic Floor Distress Inventory Short-form (PDFI-20) scores 3 months after surgery showed that specimen retrieval through posterior colpotomy did not affect sexual function. Finally, disease-free and overall survival were similar in the two patient groups.

The study by Hu et al. helps to put into perspective the current research interest in NOSES for laparoscopic right colectomy. From our perspective, in real-world surgical practice, additional research endeavors are needed to bring more evidence of safety and effectiveness and to increase acceptance of this procedure by patients and surgeons.

First, patient selection should be better defined to identify which subjects can benefit most from transvaginal extraction. Second, the technique of posterior colpotomy should be standardized and proper training should be provided to general and colorectal surgeons to prevent procedure-related morbidity. Third, the long-term effects on chronic pelvic pain, pelvic floor dysfunction, fertility, quality of life, and survival need to be assessed.

At present, besides gender, limiting factors for transvaginal specimen extraction include endometriosis, a narrow vagina, morbid obesity, and a bulky tumor. It is likely that in the future, with larger studies and the development of novel hybrid endoscopic and robotic platforms, more evidence will emerge to effectively reduce the impact of laparoscopy on the abdominal wall and to benefit the vast majority of patients undergoing right colectomy.

Declarations of interest

The authors have no competing interests to declare.

Copyright

This work has not been published previously, is not under consideration for publication elsewhere, and if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright holder.

Ethical review committee statement

Not applicable.

References

- [1] S. van Oostendorp, A. Elfrink, W. Borstlap, L. Schoonmade, C. Sietses, J. Meijerink, et al., Intracorporeal versus extracorporeal anastomosis in right hemicolectomy: a systematic review and meta-analysis, *Surg. Endosc.* 31 (2017) 64–77.
- [2] R.K. Cleary, A. Kassir, C.S. Johnson, A.L. Bastawrous, M.K. Soliman, D.S. Marx, et al., Intracorporeal versus extracorporeal anastomosis for minimally invasive right colectomy: a multi-center propensity score-matched comparison of outcomes, *PLoS One* 13 (10) (2018) e0206277.
- [3] E. Rausa, G. Bonitta, L. Bonavina, Is Pfannestiel incision the “one-size-fits-all” solution for specimen retrieval in colorectal surgery? *Ann. Surg.* 270 (2) (2019) e37–e38.

DOI of original article: <https://doi.org/10.1016/j.ijjsu.2019.07.025>

<https://doi.org/10.1016/j.ijjsu.2019.08.008>

Available online 08 August 2019

1743-9191/ © 2019 IJS Publishing Group Ltd. Published by Elsevier Ltd. All rights reserved.

- [4] F. Nehzat, A.I. Brill, C.H. Nezhat, C. Nehzat, Adhesion formation after endoscopic posterior colpotomy, *J. Reprod. Med.* 38 (1993) 534–536.
- [5] X.W. Li, C.Y. Wang, J.J. Zhang, Z. Ge, X.H. Lin, J.H. Hu, Short-term efficacy of transvaginal specimen extraction for right colon cancer based on propensity score matching: a retrospective cohort study, *Int. J. Surg.* (2019).

Emanuele Asti^{a,b}, Luigi Bonavina^{a,b,*}

^a *IRCCS Policlinico San Donato, Division of General and Foregut Surgery, Italy*

^b *Department of Biomedical Sciences for Health, University of Milan, Italy*
E-mail address: luigi.bonavina@unimi.it (L. Bonavina).

* Corresponding author. University of Milan Medical School, Division of General and Foregut Surgery, IRCCS Policlinico San Donato, Piazza Malan 1, 20097, San Donato Milanese, Milano, Italy.