Techniques in Coloproctology (2019) 23:931–932
https://doi.org/10.1007/s10151-019-02065-z

VIDEO FORUM

The impact of indocyanine-green fluorescence imaging on intraluminal perfusion of a J-pouch

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Received: 27 July 2019 / Accepted: 9 August 2019 / Published online: 27 August 2019
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Based on the ability of ICG to become fluorescent when excited by near-infrared light, many recent reports have evaluated the "real-time" blood flow prior to or after colorectal anastomosis [1]. In this video we show the case of a 50-year-old man with a 7-year history of ulcerative colitis (UC) who was diagnosed as having rectal cancer in a surveillance colonoscopy 5 years ago, and the laparoscopic total colectomy with handsewn ileal pouch-anal anastomosis was performed. The patient's postoperative course was uneventful. Pathological examination revealed well-differentiated tubular adenocarcinoma, depth Tis without lymph node metastasis and surgical margins negative for carcinoma, and confirmed as pathological stage 0. At the most recent visit, the elevation of carcinoembryonic antigen to 13.0 ng/ml was observed. Peritoneal recurrence, invading the small bowel, adjacent to the artery feeding the J-pouch, the left ureter and the left common iliac artery, was confirmed by an enhanced computed tomography (CT) scan. Chemotherapy (FOLFIRI + panitumab) was indicated with the intention of reducing tumor size to allow resection of the tumor. After ten courses of chemotherapy, there was shrinkage of the recurrent tumor, and the tumor resection was planned. Laparotomy was performed through a midline incision, and the tumor adjacent to the feeding artery of the J-pouch, the left ureter and the left common iliac artery was identified. The tumor could be dissected without damaging the artery and ureter, but the involved segment of the small bowel was resected en bloc with the tumor. After resection of the tumor, due to the pelvic adhesions, we could not evaluate the blood flow of the J-pouch from the abdominal cavity, even with the use of colonoscopy. We injected the ICG solution (12.5 mg/5 ml) (Diagnogreen; Daiichi Pharmaceuticals, Tokyo, Japan), prepared by dissolving 25 mg of Powdered ICG in 10.0 ml of sterilized water, into the peripheral vein and evaluated the perfusion of the intraluminal side of the pouch using the laparoscopic near-infrared camera system (VISERA ELITE II, Olympus, Tokyo, Japan) from the anus. Forty seconds after the injection, the blood flow of the J-pouch could be clearly visualized, without any defects at the intraluminal side of the pouch (Supplementary video file). The patient's postoperative course was uneventful. Pathological examination confirmed adenocarcinoma of the same histology of the previous rectal cancer. In the case presented here ICG fluorescence was confirmed to be effective in evaluating the intraluminal perfusion of a J-pouch, suggesting the potential new applicability of this methodology in the field of colorectal surgery.

In conclusion, the intravenous injection of ICG allowed us to confirm the blood flow of the J-pouch after resection of the peritoneal recurrence, suggesting the potential new application of this methodology for intraluminal evaluation in case of pelvic adhesions.

Electronic supplementary material The online version of this article (https://doi.org/10.1007/s10151-019-02065-z) contains supplementary material, which is available to authorized users.

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Author contributions All authors contributed to the study conception and design. Material preparation and data collection were performed by KK, HI, SE, KM, MK, KS, YS, TT, KH, HN and SI. The first draft of the manuscript was written by TN and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Compliance with ethical standards

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

Ethical approval The study was conducted in accordance with the ethical guidelines of the Declaration of Helsinki and was approved by the Ethics Committee of the University of Tokyo (No. 3252-(8)).

Informed consent For this type of study, the opportunity to opt out is always available to corporate patients on the website.

Reference

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