

Use of indocyanine green in endometriosis surgery

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Objective: To report and visually demonstrate the feasibility of using indocyanine green (ICG) in endometriosis surgery and to discuss potential benefits.

Design: ICG fluorescent imaging has been validated to assess tissue perfusion with clinical use in many medical fields, including gynecology and digestive surgery, but has not been described in endometriosis surgery for bowel assessment. To our knowledge, there is no validated, objective, intraoperative method to assess the vascularity of the operated bowel in endometriosis surgery, a potentially good indicator for postoperative fistula formation. Our center is conducting a registered clinical trial examining the use of ICG to evaluate the bowel vascularization after endometriosis rectal shaving surgery, and the potential role in reducing fistula rates (Institutional Review Board no 2016-002773-35).

Setting: Tertiary university hospital.

Patient(s): Three patients undergoing laparoscopic surgery for deep infiltrating endometriosis (DIE) with the use of a rectal shaving procedure.

Interventions(s): Patients undergoing laparoscopic surgery for DIE with a rectal shaving procedure were injected with ICG intravenously at the end of endometriosis resection.

Main Outcome Measures: Visual assessment of the rectal shaving area was assessed as fluoresced or not with the use of a Likert-type scale (0 = no fluorescence; 4 = very good fluorescence).

Result(s): After ICG injection, all three patients have showed very good fluorescence levels at the rectal shaving area with no adverse reactions. Other uses of ICG are demonstrated throughout the video (vaginal cuff, ureter, and ovary assessment).

Conclusion(s): ICG fluorescent imaging is feasible in endometriosis surgery, and there is an ongoing trial to determine if its use reduces postoperative fistula formation.

Clinical Trial Registration Number: NCT03080558. (Fertil Steril® 2018; ■:■-■. ©2018 by American Society for Reproductive Medicine.)

Key Words: Fluorescence imaging, indocyanine green (ICG), endometriosis, rectal shaving, fistula

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