Fluorescence-guided management of deep endometriosis

Atanas Aleksandrov, M.D., a,b Moshe Meshulam, M.D., a,c Andres Viguera Smith, M.D., d Pauline Chauvet, M.D., a,e Michel Canis, M.D., Ph.D., a,e and Nicolas Bourdel, M.D., Ph.D. a,e

a Department of Gynecological Surgery, Clermont-Ferrand University Hospital Estaing, Clermont-Ferrand, France; b Specialised Hospital for Obstetrics and Gynecology SBAGAL Pr. Dimitar Stamatov, Medical University Varna, Varna, Bulgaria; c Helen Schneider Hospital for Women, Rabin Medical Center, Petach Tikva, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel; d Department of Obstetrics and Gynecology, Higueras Hospital, Concepcion, Chile; and e EnCoV, IP, UMR 6602 CNRS, Université Clermont Auvergne, Clermont-Ferrand, France

Objective: To demonstrate the advantages of the fluorescence-guided surgery using indocyanine green (ICG) in the management of deep endometriotic nodules toward more complete and safe excision of the disease in cases when rectal shaving is performed.

Design: Surgical video demonstrating the result of the application of a fluorescent dye (ICG) during deep endometriosis surgery. The local institutional review board was consulted and ruled that approval was not required for this video article because the video describes a technique and the patient cannot be identified.

Setting: Tertiary-care university hospital.

Patient(s): The patient underwent rectal shaving due to a deep endometriotic nodule located at the level of the rectovaginal septum.

Intervention(s): The procedure started with exploration of the lesion and the anatomical structures. The nodule is approached using the “reverse technique.” As the nodule is infiltrating the vagina, complete resection of the posterior vaginal wall is performed. At the start of the rectal shaving, ICG is injected and its fluorescence effect is used to provide navigation for the surgeon during the excision. At the end of the procedure the vascularization of the bowel wall and the vagina are evaluated with the help of the ICG.

Main Outcome Measure(s): Visual assessment and distinction between the borders of the endometriotic nodule and the rectal wall as a result of the fluorescence effect of the ICG.

Result(s): After injection of the ICG, the borders of the healthy rectum are delineated and a clear distinction between the endometriotic nodule and the bowel wall is demonstrated. In addition, the effect of the ICG was used to assess the vascularization of the infiltrated organs (vagina and rectal wall).

Conclusion(s): Deep endometriosis at the level of the rectum usually represents a solid fibrotic nodule. The fibrosis plays a major role in the development of the disease. Indocyanine green is a fluorescent contrast agent, routinely used in a wide range of specialties to assess the blood supply and vascularization of different organs and tissues. Based on the fibrotic nature of the disease, the fluorescence could facilitate the distinction between healthy vascularized tissues and the endometriotic nodule. In the present case, using ICG, a clear difference between the nodule and the rectum is demonstrated, as well as the vascularization of the bowel wall and the vagina. The implementation of ICG during endometriosis surgery could provide navigation for the surgeon toward a more complete and safer treatment of the disease, reducing the risk of complications and reinterventions. Additional studies are needed to further evaluate ICG fluorescence-guided surgery in the management of deep endometriosis. (Fertil Steril® 2020;:—. ©2020 by American Society for Reproductive Medicine.)

Key Words: Laparoscopy, fluorescence imaging, indocyanine green, endometriosis, rectal shaving

SUGGESTED READING


3. Kondo W, Bourdel N, Tamburro S, Cavoli D,

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Reprint requests: Nicolas Bourdel, M.D., Ph.D., Department of Gynecological Surgery, CHU Estaing, Clermont-Ferrand, 1 Place Lucie Aubrac, 63003 Clermont-Ferrand, France (E-mail: nicolas.bourdel@gmail.com).

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