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Original Article

A national snapshot of the surgical management of deep infiltrating endometriosis of the rectum and colon in France in 2015: A multicenter series of 1135 cases

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ABSTRACT

Objective. – To perform a survey on the characteristics of the surgical management of patients with deep infiltrating endometriosis of the rectum and the sigmoid colon (DIERS) in France in 2015.
Method. – Case-series study enrolling patients with DIERS involving muscularis, submucosa or mucosa, operated on from January 1st to December 31st 2015, in 56 healthcare facilities in France. Surgeons filled in questionnaires concerning the number of patients, deep endometriosis localizations, surgical route and techniques used on digestive tract, associated surgical procedures and major complications. Data were pooled in a single database.
Results. – A total of 1135 patients from 56 healthcare facilities were enrolled in the series (33 university hospitals, 4 general hospitals and 19 private hospitals). Deep endometriosis infiltrated only the rectum in 56.8% of cases, the rectum and the sigmoid colon in 36.3% and only the sigmoid colon in 6.9%. Associated localizations involved the cecum in 6.6% of cases, small bowel in 4.7%, bladder in 9%, and were responsible for stenosis of the ureters in 13.4% and for hydronephrosis in 6.8%. Surgery was performed using conventional laparoscopy in 82.2% of cases, robotic-assisted laparoscopy in 9.7% and open surgery in 8.1%. Rectal shaving was carried out in 48.1% of cases, disc excision in 7.3%, colorectal segmental resection in 40.4% and sigmoid colon segmental resection in 6.4% (2 different procedures could be associated in the same patient). Ureter resection was carried out in only 4% of cases, representing 29.6% of cases with stenosis of the ureters. Bladder resection was carried out in 6.9%. Vaginal resection and hysterectomy were performed in 33 and 14.7% of cases respectively, while temporary stoma was used in 19.1%. Anastomotic leakage occurred in 0.8% of cases, pelvic abscess in 3.4%, rectovaginal fistula in 2.7%, ureter fistula in 0.7%, while 8.6% of patients either required catheterization after recovery or had a post-voiding bladder volume superior to 100 mL. According to the surgical procedure used, the risk of rectovaginal fistula was 1.3, 3.6 and 3.9% after shaving, disc excision and segmental resection respectively. Intensive care was required in 1.1% and blood transfusion in 2.2%. One patient died (0.1%) after rectal shaving.
Conclusions. – Our 2015 survey of a large number of patients managed for DIERS in France confirms that DIERS is far from being a rare disease. Even in the setting of complex procedures requiring multidisciplinary teams, a laparoscopic approach can achieve successful surgical treatment in 9 out of 10 patients with an acceptable risk of major postoperative complications.

Introduction

Surgical management of deep infiltrating endometriosis of the rectum and sigmoid colon (DIERS) has become a topic of increasing interest in gynecological surgery, leading to much debate. Over the last 20 years, there has been a steady rise in the number of

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scientific articles published, and many surgical teams worldwide have reported their experience. Five years ago, Meuleman et al. reported a large review of the literature, pooling 49 original studies, which enrolled 3894 patients with colorectal endometriosis [1]. Among them, 71% were managed by colorectal resection, 10% by full thickness disc excision, and 17% benefited from various techniques of shaving. However, a comparison of clinical outcomes between different surgical techniques was not possible. Despite the indubitable merits of this review, it is obvious that it does not provide an overview of the management of colorectal endometriosis worldwide, but only a focus on those teams, which reported their series before 2010.

Nevertheless, the review by Meuleman et al. confirmed two surgical philosophies or approaches commonly used in the management of colorectal endometriosis: a radical approach mainly based on colorectal segmental resection [2–7] and the conservative or symptom-guided approach prioritising conservation of the rectum [8–11]. The latter may be performed without opening the rectum (shaving or partial thickness excision) or by removing the nodule along with surrounding rectal wall (full thickness or disc excision) [10,12,13]. Due to the paucity of comparative studies in the literature [13–16], it should be emphasized that present available data are provided by retrospective series reported by surgeons who generally perform only one technique. In series with patients managed by only one surgical procedure, it may be unclear whether only patients having benefited from this procedure were included, or whether surgeons routinely performed only this procedure [17]. Consequently, recommendations concerning the surgical management of DIERS are based on meagre evidence and tend to reflect a surgeon's personal convictions and experience [18]. For these reasons, there is a lack of accurate information on the actual percentage of patients who had one or other technique, as well as postoperative complications related to each strategy.

According to national medical databases such as PMSI (*Programme de Médicalisation des Systèmes d'Information*), identification of surgical procedures performed on the digestive tract for DIERS is a serious concern. Although patients undergoing segmental resection may be specifically identified using appropriate codes, such as HJFA004, no specific codes exist for full thickness disc excision or deep shaving (partial thickness excision). For these reasons, estimation of the real number of patients managed for DIERS requires a future study pooling all the series provided by all the surgeons having managed this disease during a given period of time. Such was the concern of the surgical teams, which decided to found FRIENDS (French coloRectal Infiltrating ENDometriosis Study) in January 2016, in order to foster shared experiences and improve DIERS management.

The aim of our study was to provide a snapshot of real-life practice in France in 2015 particularly regarding surgical route, procedures performed, and main immediate postoperative complications.

Methods

The present study pooled a series of patients managed for DIERS in 56 public and private healthcare facilities in France, from January 1st to December 31st 2015. Infiltration of the large bowel wall was defined as involvement of muscular, submucosal or mucosal layers (patients presenting with only superficial involvement of bowel serosa were excluded). So as to involve the largest number of healthcare facilities in France, the first author (H.R.) invited all heads of department of gynecology and obstetrics in university hospitals in France, as well as all surgeons known for managing patients with DIERS to participate in the study. Surgeons were asked not only to participate in the study, but also to add the names of colleagues used to performing DIERS surgery in public or private healthcare facilities in their geographic area. Hence, a list of 142 gynecologic and general surgeons was drawn up over three consecutive weeks and identified under the name FRIENDS group (*French coloRectal Infiltrating ENDometriosis Study group*). One surgeon was identified as the official correspondent for each healthcare facility.

All surgeons were sent a 43-item questionnaire, which they were asked to fill in and return before March 15th, 2016 (Table S1). The items concerned data on their facility, the number of surgeons involved in the management of DIERS in 2015, the number of patients managed for DIERS in 2015, localizations of nodules on digestive tract and associated localizations of deep endometriosis, surgical route, surgical procedures performed, and the main immediate postoperative complications related to each technique. Data were collective and not individual (subjects were represented by the facilities). A dictionary in French listing the definition of each item was sent to each surgeon in order to ensure standardized inclusion criteria (Table S1). Then, each correspondent sent the completed questionnaire to the clinical researcher of the CIRENDO database (Rouen University Hospital) who built the collective database. The study was retrospective and as no individual data were collected it was approved by the IRB.

Statistical analysis was performed using Stata 9.0 software (Stat Corporation, Lakeway Drive, TX, USA). Qualitative variables were reported as number (percentage) and continuous variables as mean (SD) or median (range). Data were compared using either the Kruskal Wallis test (continuous variable) or the Fisher exact test (qualitative variables). $P < 0.05$ was considered statistically significant.

Results

All the heads of departments replied to the invitation to participate to the survey. All the surgeons invited to join the group accepted the invitation and reported their personal series of patients managed in 2015. Thus, surgeons from 56 healthcare facilities joined the FRIENDS group: 33 university hospitals, 4 general hospitals and 19 private hospitals (Fig. 1). They were located in 13 different regions in France (Fig. 2). They reported data concerning 1135 patients managed for DIERS from January 1st to December 31st 2015. The number of patients managed per facility varied from 1 to 121 (Fig. 1). Nine facilities reported ≥ 40 patients (7 university hospitals and 2 private hospitals), 12 facilities reported 20 to 39 patients (7 university hospitals, 2 general hospitals and 3 private hospitals), 9 facilities reported 10 to 19 cases (5 university hospitals and 4 private hospitals), while 26 facilities managed fewer than 10 cases in 2015 (14 university hospitals, 2 general hospitals and 10 private hospitals). Four university hospitals reported more than 60 cases and one more than 100 patients.

Deep endometriosis infiltrated only the rectum in 645 patients (56.8%), both the rectum and the sigmoid colon in 412 patients (36.3%) and only the sigmoid colon in 78 cases (6.9%) (Table 1). Associated localizations of deep endometriosis were identified in the cecum in 75 cases (6.6%) and the small bowel in 53 patients (4.7%). The bladder was also involved in 102 patients (9.1%), stenosis of the ureters was revealed in 152 patients (13.4%) and 77 of them presented with hydronephrosis (6.8%). Concomitant macroscopic infiltration of the vagina was recorded in 374 patients (33.1%).

Laparoscopic route was performed in 933 patients (82.2%). Robotic-assisted laparoscopy was used in 110 patients (9.7%) enrolled in 8 facilities, even though 4 of these facilities used this approach in only a minority of patients. Open surgery was performed in 92 patients (8.1%). Open route was used in most

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