

Surgical Management of Deep Infiltrating Endometriosis and Impact on Quality of Life

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Objective: The purpose of this retrospective review study was to assess the impact of surgery and quality of life for patients presenting painful deep infiltrating endometriosis (DIE).

Patients and methods: All patients with histologically proved infiltrating endometriosis who had surgery from 1.01.2006 to 31.12.2010 at the Clinic of Obstetrics and Gynecology I, Tîrgu Mureș, Romania and the Department of Gynecology and Obstetrics of the Rouen University Hospital-Charles Nicolle, Rouen, France were included in the study. Surgical exeresis of endometriosis for patients with deep infiltrating endometriosis with GnRha (Gonadotrophin-releasing hormone) analogues treatment before and after the surgery.

Results: One-hundred-fourteen subjects underwent operative laparoscopy for deep infiltrating endometriosis. Involvement of urinary tract was confirmed in thirty patients and the colorectal localization in eighty-four patients. Intra-operative finding according to American Fertility Society reviewed-classification (AFSr) score revealed stage I 6 (5.3%), stage II 9 (7.9%), stage III 18 (15.8%), and stage IV 81 (71.1%).

Conclusion: Resection for deep endometriosis appears to relieve some symptoms. However, patients should be informed that pain may persist and that there is a risk of urinary and digestive side effects.

Keywords: deep infiltrating endometriosis, urinary endometriosis, colorectal endometriosis, pelvic pain, medical treatment

Introduction

The exact prevalence of endometriosis is not well defined, as the standard of reference for diagnosis remains laparoscopy or laparotomy; it is, however, estimated to be found in about 5–10% of women, including both symptomatic and asymptomatic women [1]. The most common locations of endometriosis are the ovaries and the pelvic peritoneum, followed by deep lesions of the pelvic sub peritoneal space, the intestinal system, and the urinary system [2]. Deeply infiltrating endometriosis is a specific entity: deep endometriotic lesions penetrate under the surface of peritoneum (infiltration >5 mm) in the uterosacral ligaments (USL), rectum, rectovaginal septum, vagina or bladder, inducing a fibromuscular hyperplasia that surrounds endometriosis foci [3].

Laparoscopic surgery for deep infiltrating endometriosis is carried out by many surgical teams and several retrospective studies have been published lately [4–10]. Significant variations in terms of the intraoperative and postoperative complications related to each surgical strategy depends, on the size of the nodule(s), frequency of multifocal nodules, and other associated deep lesions [11,12].

Patients and methods

We conducted a retrospective study including women who had undergone laparoscopic surgery for deep infiltrating endometriosis with colorectal and/or urinary involvement, from January 2006 to December 2010 at Clinic of Obstetrics and Gynecology I, Tîrgu Mureș and the Department of Gynecology and Obstetrics, Rouen University Hospital-Charles Nicolle, Rouen, France. We included only women with histologically confirmed urinary endometriosis with ureteral and/or bladder involvement or deep posterior en-

dometriosis involving muscular, sub mucosal or mucosal layers of the rectum.

Demographic and preoperative data from the patients and detailed information about surgical procedures were directly checked in database. Information about preoperative work-up and postoperative outcomes was checked in the medical records of each patient. Delayed postoperative outcomes were evaluated using standardized questionnaires and the quality of life was assessed using an amended version of the Short Form 36 health survey questionnaire (SF-36).

Results

During 60 consecutive months, 114 women underwent surgical treatment for symptomatic deep infiltrating endometriosis, and all of them completed the questionnaire. Patient characteristics are presented in table I.

Preoperative induced amenorrhea generally using GnRha and add back therapy were consistently administered for ≥6 weeks, and continued postoperatively for ≥8 weeks.

Characteristics of surgical procedures in patients with urinary endometriosis are presented in table II. Two intraoperative complications occurred one case of hemorrhage requiring laparoconversion and the other one was inadvertent ureteral section.

Main features of colorectal endometriosis are presented in table III.

Delayed postoperative outcomes and assessment of quality of life is showed in table IV.

Discussions

Demographic characteristics of patients were similar to other studies [4–10]. One of the differences was the rela-

Table I. Patients' characteristics and history of symptoms

	N=114 (%)
Age (ys)	34.8±6.2
Gravidity	71 (62.3)
Parity	
Nulliparous	22 (19.3)
Para ≥1	49 (43)
Age of first periods (ys)	13.8±1.3
BMI (kg/m ²)	24.8±3.2
Parents presenting with endometriosis	14 (16.7)
Previous surgical procedures	71 (62.3)
Other gynecological diseases	19 (16.7)
Endometriosis	52 (45.6)
Psychological or psychiatric care	29 (25.4)
Fertility	
No infertility	63 (55.3)
Primary infertility	31 (27.2)
Secondary infertility	3 (2.6)
Assisted reproductive techniques	20 (17.5)
IVF	14 (12.3)
ICSI	1 (0.9)
Inseminations IUI	1 (0.9)
Ovulation stimulation	16 (14)
Intention to become pregnant	29 (25.4)
Use of contraceptive pills	78 (68.4)
– period of use of contraceptive pills (ys)	11±4.1
Pelvic painful symptoms	
Dysmenorrhea	8.2±1.5
Deep dyspareunia	6.2±2.4
Non menstrual pain	6.1±3.3
History of painful symptoms (ys)	
Dysmenorrhea	12.5±7.2
Deep dyspareunia	7.1±3.8
Non menstrual pain	5.9±2.4
Previous medical treatment	
Danazol	3 (2.6)
Progestin's	7 (6.1)
GnRH analogues	84 (73.7)

*Pain symptoms 10-points analog rating scale: 0 = absent, 10 = unbearable

tively long history of pain (12.5±7.2). Our explanation may be the fact that infertility is the main reason of seeking medical advice and not pelvic pain. There is also a positive correlation with advance stages of endometriosis in our cohort: more than 71% of the patients were classified in stage IV AFSr [13].

High influence on quality of life in deep infiltrating endometriosis is showed also by the preoperative use of contraceptive pills in 68.4% of the patients for a long period of time (11±4.1) years.

In ureteral endometriosis the main surgical approach was ureterolysis in 13 cases representing 72.2% from ureteral endometriosis. Partial cystectomy was performed in all bladder endometriosis cases – full thickness in 13 patients – and only 2 partial cystectomy without opening the bladder. Mean operative time was 281.9±98.6 for ureteral endometriosis and 260.3±116.7 for bladder endometriosis, similar with literature [7].

The shaving technique was used in surgical management of colorectal endometriosis in 43 cases representing 51.2%, full thickness excision in 6 cases representing 7.1%

Table II. Characteristics of surgical procedures in patients with urinary endometriosis (N=30).

	Ureteral endometriosis N=16 (53%)	Bladder endometriosis N=15 (50%)
AFSr-classification (intra-operative finding)		
Stage I		1 (6.7)
Stage II		3 (20)
Stage III	6 (37.5)	1 (6.7)
Stage IV	10 (63.3)	10 (66.7)
Urinary tract surgical procedures		
Ureterolysis	13 (72.2)	2 (13.3)
Ureterectomy + ureteroureteral anastomosis	4 (22.2)	1 (6.7)
Ureterectomy + ureteroneocystectomy	2* (11.1)	1 (6.7)
Nephrectomy	0	0
Partial cystectomy	1 (6.3)	15 (100)
Full thickness		13 (86.7)
Without opening the bladder	1 (6.3)	2 (13.3)
Other surgical procedures		
Excision of rectovaginal nodules	4 (25)	3 (20)
Ovarian endometrioma vaporization using plasma energy	1 (6.3)	1 (6.7)
Ovarian endometrioma cystectomy	3 (18.8)	3 (20)
Total hysterectomy	3 (18.8)	2 (13.3)
Operative time (min)	281.9±98.6	260.3±116.7
Surgical route		
Laparoscopy	15 (93.8)	12 (80)
Laparotomy	1 (6.3)	3 (20)
Intraoperative complications		
Hemorrhage requiring laparoconversion	1 (6.3)	
Inadvertent ureteral section		1 (6.7)

* Two patients underwent respectively primary ureterolysis and ureterectomy, followed by ureteroneocystectomy.

and colorectal resection in 27 cases representing 32.1%. The shaving technique is one of the most used techniques in contemporary approach in colorectal deep endometriosis [9–11].

Regarding the preoperative assessment of quality of life, all patients presented preoperative dysmenorrhea for which the 10-points analog rating pain scale score was 8.2±1.5, deep dyspareunia 6.2±2.4, non-menstrual pain 6.1±3.3. After a postoperative mean follow-up of 16±10.2 months using the same 10-points analog rating scale pain evaluation the scores were respectively: dysmenorrhea 3.5±3.1, deep dyspareunia 2.5±3.6, and non-menstrual pain 2.3±3.5. Surgery followed by GnRHa administration (74% of patients) was able to significantly reduce pain scores by 50 %, a similar finding in the literature [5,6,9].

Conclusions

Despite numerous studies in the literature, endometriosis remains controversial, not only by affecting fertility, but also by major impact on quality of life. Surgery of deep endometriosis is still not standardized and requires complex team collaboration. The more complete the surgical excision is, the better are the chances of cure. But it will not necessarily improve the painful symptoms and quality of life because of the inherent side effects of radical surgery.

Table III. Features of colorectal endometriosis

	N=84 (%)
Features of colorectal endometriosis	
1 rectal nodule	49 (58.3)
1 or more rectal nodules associated with sigmoid colon nodules	24 (28.6)
1 nodule of the sigmoid colon	11 (13.1)
Size of the main nodule (cm)	3.2±1
AFSr score	69.1±41.3
Stage I	5 (6)
Stage II	6 (7.1)
Stage III	12 (14.3)
Stage IV	61 (72.6)
Other localizations of pelvic endometriosis	
Rectovaginal nodules	53 (63.1)
Uterosacral nodules	24 (28.6)
Right ovary	25 (29.8)
Left ovary	43 (51.2)
Appendix	4 (4.8)
Small bowel	11 (13.1)
Diaphragmatic	17 (20.2)
Bladder	8 (9.5)
Ureters	11 (13.1)
Surgical management of colorectal endometriosis	
Shaving	43 (51.2)
Full thickness excision	6 (7.1)
Colorectal resection	27 (32.1)
No answer	8 (9.5)

Table IV. Delayed postoperative outcomes

	N=114 (%)
Follow-up (months)	16±10.2
Presence of painful symptoms	49 (58.3)
Dysmenorrhea	67 (58.8)
Deep dyspareunia	75 (65.8)
Non menstrual pain	71 (62.3)
Pain evaluation using 10-points analog rating scale*	69.1±41.3
Dysmenorrhea	3.5±3.1
Deep dyspareunia	2.5±3.6
Non menstrual pain	2.3±3.5
SF36 quality of life questionnaire	86.9±24.1

*Pain symptoms 10-points analog rating scale: 0=absent, 10=unbearable

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We need to identify strategies to be applied after surgery to improve the quality of life in these patients.

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