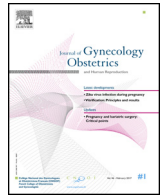




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Original Article

Fertility after surgery for deep infiltrating endometriosis

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ABSTRACT

Objectives. – The population of Reunion Island has a high prevalence of endometriosis impacting fertility. The aim of this series is to assess the fertility of women undergoing surgical approach of deep infiltrating endometriosis and to study the characteristics of the pregnancy outcomes.

Material and methods. – This is a retrospective 2 centers study, including all women wanting to be pregnant and operated for deep endometriosis in any of the 2 hospitals of the CHU of Reunion Island between January 2012 and May 2013.

Results. – Sixty-three women were included. Twenty-four (38%) had more than one operation and 16 (25.4%) experienced one or more complications. Fifty-eight (92%) had complete resection of the endometriosis. Twenty-seven (42.9%) women became pregnant at least once, spontaneously in 44.4%. Average delay for first pregnancy was 14.2 months. Twenty-two (34.9%) women became pregnant before 24 months. Among the 34 pregnancies, 20 ended with a live newborn. Premature delivery rate was 35%, cesarean section rate 10% and average birth weight was at 45th percentile.

Conclusion. – Fertility remains good after surgery for deep infiltrating endometriosis but the delay between operation and pregnancy is increased when a surgical complication occurs. Premature delivery rate is high. No pregnancy occurred in case of incomplete resection or after age of 36.

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Introduction

Deep infiltrating endometriosis (DIE) is defined by a lesion depth of 5 mm or more below the peritoneal serosa or reaching the musculosa level of the pelvic organs [1–3]. It may be associated to the 2 other types of endometriosis: superficial (limited to peritoneum) or ovarian (endometriomas). Diagnosis of endometriosis is frequently difficult and delayed by 8 to 12 years after first symptoms [4–6].

Prevalence of endometriosis is estimated at 10% among women between 15 and 49 years old [7]. It is 25 to 50% among infertile women [8]. On the other side, 25 to 50% of women with endometriosis are infertile [9]. The rate of DIE among all endometrioses is estimated at 20% leading to a prevalence of 2% [9]. According to a recently published study, prevalence of endometriosis requiring hospitalization is varying a lot among regions in France [10] but is 0.9% average. Reunion Island shows a significantly higher prevalence (1.1%).

Infertility is most frequently associated to endometriosis of any type. Except for some infrequent life or organ threatening

situations, surgical approach to DIE is mainly indicated in case of severe pain resistant to well-led analgesic treatment. Whenever possible, medically assisted reproduction (MAR) is preferred to surgery to treat infertility in endometriosis patients. Surgery may also improve fertility [9] but the question was raised about the impact on fertility of complications related to tough or even complicated surgery in case of DIE.

Some authors also reported a higher rate of miscarriages, of obstetrical complications as prematurity, pre-eclampsia or hypotrophy [11].

Our main objective was to evaluate fertility after DIE surgery in our reference hospitals in Reunion Island. Further, we wanted to check the outcome of the pregnancies in women with operated DIE.

Patients and methods

This is a retrospective descriptive multicentre (2 centers) study about women operated for DIE at the 2 university hospitals of Reunion Island between January 2012 and May 2013. Inclusion criteria were: all women with a laparoscopic and anatomopathological confirmed diagnosis of DIE that expressed their wish to procreate. Exclusion criteria were: lack of anatomopathological

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confirmation for DIE, lack of formalized desire to conceive, age over 45, previous hysterectomy.

Files were selected through the Programme of Medicalisation of Information System (PMSI). PMSI was established in France in 1991 and extended in 1997 to all French health care facilities [12]. Diagnoses identified during the admission are coded according to the 10th edition of the international classification of diseases (ICD 10). Codes for endometriosis are N800 to N809. All files with one of these codes during the study period were analyzed by one of the authors for inclusion or not. In case of missing information, the patient was contacted by phone.

Chi² and ANOVA tests have been used when needed. Data were registered on Excel and analyzed with the software Portable IBM SPSS Statistics 24. Significance is reached at $P < 0.05$.

Results

Two hundred and eighty-eight women have been operated for endometriosis between January 1st 2012 and May 31st 2013 according to PMSI. Two hundred and seven files met exclusion criteria and 18 files were excluded because either lost (2 files) or incomplete with a patient impossible to contact by phone (mainly patients having left Reunion Island). Sixty-three files were analyzed.

Population of our study

Average age was 30.9 years (21 to 42) but no pregnancy occurred after 36 years of age. BMI was 23.05, average (17 to 32). Thirty-three patients (52.4%) had been pregnant before the operation and 20 (31.7%) delivered at least once. Two patients had a previous Caesarean section. Nine women had a family history of endometriosis. All women were infertile since 4 years average (1 to 12 years). Twenty-seven patients (42.8%) had in vitro fertilization (IVF) before surgery.

Symptoms (Fig. 1) were dysmenorrhoea in 95.2%, dyspareunia in 73%, painful defecation in 47.6%, painful micturation in 23.8%, rectorrhagia in 3.2% and menstrual hematuria in 1.6% of patients.

Surgery

The lesions visible at laparoscopy are described on Fig. 2. Almost all of the patients had adhesions of various extend. Uterosacral ligaments and torus were involved in 56 women and rectovaginal septum in 42. In all of them except 5, total excision of the lesions using harmonic scalpel was feasible. In 5 patients, it was technically impossible or seemed too dangerous (DIE infiltrating the sciatic nerve in 3, reaching the lower third of vagina in 2 others). Sigmoid colon and/or rectum were involved in

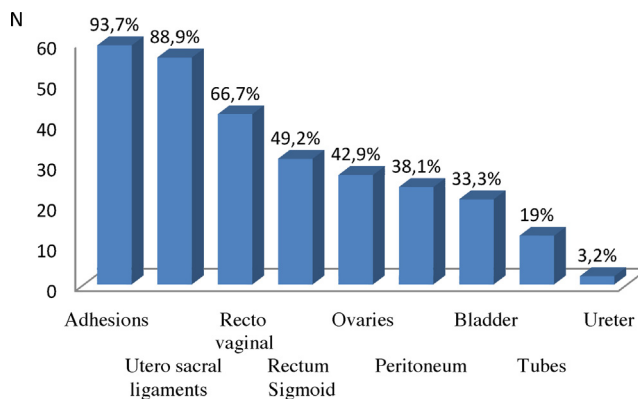


Fig. 2. Localization of the lesions (n = 63).

31 women. Six segmental bowel resections, one full thickness discoid bowel resection and 24 rectal shavings were performed in these patients. Endometriomas were present in 27 women and vaporized with Plasmajet[®]. Superficial peritoneal endometriosis was associated in 24 cases and vaporized with Plasmajet[®] or coagulated with bipolar cautery. Vesical localization was found in 21 patients and totally excised in all cases; 12 partial cystectomies had to be performed. Tubal involvement with hydrosalpinx was seen in 12 patients and led to complete salpingectomy. Ureteral stenosis occurred in 2 women of the study; one underwent only ureterolysis and the other had a segmental resection of the ureter followed by end to end anastomosis. None showed diaphragmatic endometriosis in our series. Nine patients had a unilateral adnexectomy (14.3%). It was the first operation for 39 patients, the second for 19, the third for 4 and the fourth for one patient.

Complications

Sixteen patients (25.4%) had one or more complications, including 15 severe ones (Fig. 3).

Postoperative fertility

Thirty-four pregnancies occurred within 14.2 months average (1 to 47 months). Forty-three patients (68.3%) needed MAR (Table 1). Twenty-seven patients had at least one pregnancy and 7 had 2 pregnancies. Twenty-two women (34.9%) started a pregnancy within 24 months after operation.

Pregnancies

Two of the pregnancies were twins, one spontaneous, the other one after IVF. Outcomes are described on Fig. 4: miscarriages 14.5%,

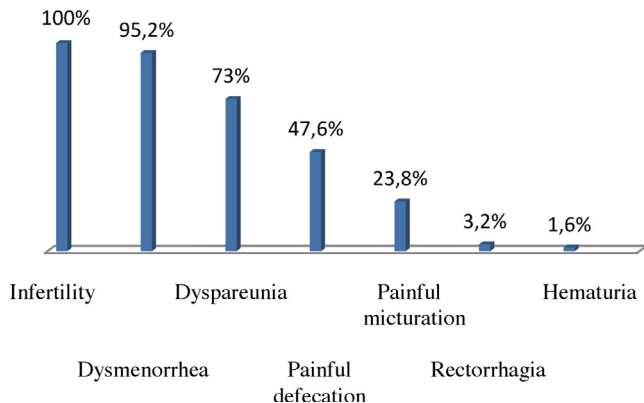


Fig. 1. Symptoms (n = 63).

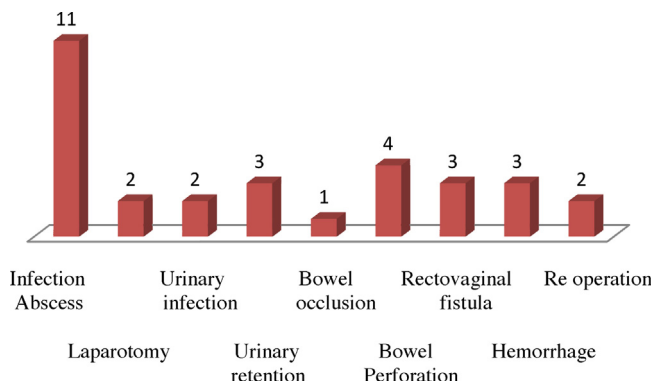


Fig. 3. The complications.

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