

**ORIGINAL RESEARCH**

# Evaluation of histopathological findings of Surgical Treatment of Endometriosis

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**ABSTRACT**

**Background:** This study was conducted to evaluate histopathological findings of Surgical Therapy of Endometriosis. **Material and methods:** This study comprised of 100 females who underwent surgical treatment for endometriosis. They had a laparoscopic laparoscopy and were not given any further medical care. Adhesions were eliminated, endometriosis foci were completely removed, and the reproductive organs' natural structure was reinstated. Extensive laparoscopic resection was used to treat deep infiltrating endometriosis with large lesions impacting the intestine and/or urinary tract, which was fortunately identified prior to surgery. **Results:** In the 100 subjects undergoing surgical treatment, disease stage was EEC I in 56%, EEC II in 28%, and EEC III in 16% of the subjects. The symptoms like dysmenorrhoea, dyspareunia and abdominal pain were evident in 62, 21 and 17 subjects before the surgery whereas in 19, 11 and 8 subjects after one year of surgery, respectively. Endometrial glands, stroma and chronic hemorrhage was the findings in 58 percent of the patients while endometrial glands and stroma only was the finding in 35 percent of the patients. Endometrial gland and chronic hemorrhage was the finding in 7 percent of the patients. **Conclusion:** The chief histopathological finding was endometrial glands, stroma and chronic hemorrhage.

**Keywords:** Endometriosis, dysmenorrhoea, dyspareunia, abdominal pain, surgery.

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**INTRODUCTION**

Endometriosis is one of the most common gynaecological disorders but also one of the greatest challenges facing gynaecological surgeons.<sup>1</sup> A guideline-oriented approach, extensive experience of surgical techniques and interdisciplinary cooperation are the prerequisites for successful treatment. A detailed history of individual symptoms, adequate diagnostics and special surgical skills are indispensable for diagnosing endometriosis and for preoperative planning and surgery.<sup>2-4</sup> It is also important that the surgeon and patient take the time to consider the "difficult", in some instances, controversial, and potentially risky aspects of possible surgical interventions.

Pelvic endometriosis remains a late diagnosed complex and mysterious disease that still gives rise to continuous research but can currently only be treated in up to 70% of cases with 3 treatment options. In the past, the main strategy was the induction of a pseudopregnancy and the application of gestagens and later danazol and GnRH analogues.<sup>5</sup> Up to now, this theory "The production of pseudopregnancy" has

been regarded as the "gold standard," but it is now supplemented by a simple progesterone (dienogest, 2 mg per day) treatment or a GnRh analogue treatment with add-back therapy.<sup>6</sup> To prevent side effects of the GnRH agonist, such as bone demineralization, vasomotor symptoms, and mood swings, a serum estradiol concentration of approximately 60 pg/mL is required.<sup>7-9</sup> Every medical treatment today is well tolerable but should only be used as long as necessary. In case it is used as long-time treatment, it should reduce the number of surgical interventions and improve the quality of life. As endometriosis is a progressive disease, which can cause the anatomic destruction of the reproductive organs, surgical therapy plays an important role. Laparoscopy provides the only possibility of ascertaining the expected diagnosis of endometriosis. Endometriosis has a varying phenotype and can appear as raised flame-like patches, whitish opacifications, yellow-brown discolorations, translucent blebs, or reddish irregularly shaped spots.<sup>10</sup> Hence, this study was conducted to evaluate histopathologic findings of the surgical therapy of endometriosis.

## MATERIAL AND METHODS

This study comprised of 100 females who underwent surgical treatment for endometriosis. They had a laparoscopic laparoscopy and were not given any further medical care. Adhesions were eliminated, endometriosis foci were completely removed, and the reproductive organs' natural structure was reinstated. Lesions in the superficial bowel and the ureter were removed. Tubal patency was assessed and chromoperturbation was carried out during the second-look laparoscopy for individuals with

infertility. The study did not include patients who had undergone rectum or bladder resection due to deep infiltrating endometriosis. The exclusion criteria included deep infiltrating endometriosis with bladder or rectum excision, as well as prior hormone therapy or surgery for endometriosis. Extensive laparoscopic resection was used to treat deep infiltrating endometriosis with large lesions impacting the intestine and/or urinary tract, which was fortunately identified prior to surgery.

## RESULTS

**Table 1: Distribution of patients to EEC stages before and after therapy.**

| Therapy method | EEC stage    |              |              |              |
|----------------|--------------|--------------|--------------|--------------|
|                | EEC 0 CI     | EEC I CI     | EEC II CI    | EEC III CI   |
| Surgery        |              |              |              |              |
| Before surgery | 0            | 56 39.5-51.2 | 28 23.6-41.2 | 16 10.9-23.4 |
| After surgery  | 50 44.2-61.5 | 20 8.7-19.4  | 18 14.1-27.5 | 12 4.9-15.7  |

In the 100 subjects undergoing surgical treatment, disease stage was EEC I in 56%, EEC II in 28%, and EEC III in 16% of the subjects.

**Table 2: Comparison of recurrence rates for the three therapy methods before and after one year.**

| Therapy method  | Recurrent symptoms (in %)/CI |              |                |
|-----------------|------------------------------|--------------|----------------|
|                 | Dysmenorrhea                 | Dyspareunia  | Abdominal pain |
| <b>Surgical</b> |                              |              |                |
| Before          | 62/ 45.2-63.4                | 21/40.9-57.8 | 17/36.7-52.3   |
| After           | 19/ 11.2-14.3                | 11/8.6-18.6  | 08/14.3-32.1   |

The symptoms like dysmenorrhoea, dyspareunia and abdominal pain were evident in 62, 21 and 17 subjects before the surgery whereas in 19, 11 and 8 subjects after one year of surgery, respectively. Endometrial glands, stroma and chronic hemorrhage was the findings in 58 percent of the patients while endometrial glands and stroma only was the finding in 35 percent of the patients. Endometrial gland and chronic hemorrhage was the finding in 7 percent of the patients.

**Table 3: Histopathological component**

| Diagnostic pathological component                 | Number | Percentage |
|---|--------|------------|
| Endometrial glands, stroma and chronic hemorrhage | 58     | 58         |
| Endometrial glands and stroma                     | 35     | 35         |
| Endometrial gland and chronic hemorrhage          | 7      | 7          |
| Total   | 100    | 100        |

## DISCUSSION

Both from the surgeon's and the patient's point of view, the extent of the actual manifestation of disease and the associated extent of the planned surgery are the most important preoperative considerations, but these are also the factors which are most difficult to assess preoperatively. Frequently, the extent of surgery will only become clear intraoperatively.<sup>11,12</sup>

The lines of resection are primarily determined by the extent of disease spread. The goal of surgery is complete resection, which can include resection of parts of the intestine and involve the ureters and bladder.<sup>13,14</sup>

In addition to the necessary surgical experience, a good interdisciplinary cooperation and close involvement of the patient are important during the planning stage. Despite adequate diagnostics, it may be necessary to broaden the scope of the primary intervention. This may also be unexpectedly necessary

during surgery, for example, if there is intestinal involvement beyond the rectovaginal septum or non-obstructive involvement of the ureter.

The efficacy of medical and surgical treatment of endometriosis-associated infertility and pelvic pain is a source of ongoing controversy. Complete resolution of endometriosis is not yet possible and current therapy has three main objectives: (1) to reduce pain; (2) to increase the possibility of pregnancy; and (3) to delay recurrence for as long as possible. It is possible that a consensus will never be reached on the optimal treatment of minimal and mild endometriosis. In case of moderate and severe endometriosis-associated infertility, the combined approach (operative laparoscopy with a gonadotropin-releasing hormone (GnRH) agonist) should be considered as 'first-line' treatment.<sup>15</sup>

Hence, this study was conducted to evaluate the surgical therapy of endometriosis.

In this study, among the 100 subjects undergoing surgical treatment, disease stage was EEC I in 56%, EEC II in 28%, and EEC III in 16% of the subjects. The symptoms like dysmenorrhoea, dyspareunia and abdominal pain were evident in 62, 21 and 17 subjects before the surgery whereas in 19, 11 and 8 subjects after one year of surgery, respectively.

Endometrial glands, stroma and chronic hemorrhage was the findings in 58 percent of the patients while endometrial glands and stroma only was the finding in 35 percent of the patients. Endometrial gland and chronic hemorrhage was the finding in 7 percent of the patients. Mettler L et al<sup>16</sup> evaluated three different treatment strategies (hormonal medication, surgical, or combined treatment) and discussed the influence of endometriosis on the cure of this disease and pain relief. Four hundred and fifty patients with genital endometriosis, aged 18–44 years, were randomly distributed to three treatment groups at the first laparoscopy. They were reevaluated at a second-look laparoscopy (D 426/10), one to two months after the three-month hormonal therapy for groups 1 and 3 and five to six months later for group 2 (surgical treatment alone). Outcome data focussed on the recurrence of symptoms and pain. The three treatment options independent of the initial endoscopic endometriosis classification (EEC) stage including deep infiltrating endometriosis (DIE) achieved an overall cure rate of 50% or higher. The highest cure rate of 60% was achieved by the combined treatment, 55% by the exclusively hormonal therapy, and 50% by the exclusively surgical treatment. An overall pregnancy rate between 55% and 65% was achieved with no significant difference in relation to the therapeutical option.

Roman JD et al<sup>17</sup> described their experience with surgical treatment of endometriosis. One hundred sixty-three patients with histologically confirmed endometriosis who had completed a preoperative questionnaire, had available intraoperative findings and photographic documentation, and had been followed up to 6 years. Patients completed a visual analogue scale (VAS) for 6 components of endometriosis-related symptoms. The EuroQol Group EQ-5D questionnaire was used for evaluation of quality of life. Long-term follow up was performed using a questionnaire and review of patient medical records. Mean (SD; 95% confidence interval) patient age at surgery was 31.01 (8.5; 29.7-32.3) years. The primary symptom at initial consultation was dysmenorrhea in 94 patients (57.67%, nonmenstrual pelvic pain in 44 (27%), dyspareunia in 11 (6.75%), menorrhagia in 8 (4.9%), infertility in 4 (2.45%), and pelvic mass in 2 (1.23%). Thirty-three patients (20%) had undergone previous surgery because of endometriosis. At surgery, endometriosis was stage I in 50 patients (30.67%), stage II in 65 (39.88%), stage III in 23 (14.11%), and stage IV in 25 (15.34%). Other surgical procedures performed with the index surgery were cystoscopy in 48 patients (29.45%),

laparoscopic ovarian cystectomy in 24 (14.72%), laparoscopic hysterectomy in 15 (9.2%), laparoscopic appendectomy in 9 (5.5%), sigmoidoscopy in 6 (3.68%), laparoscopic oophorectomy in 6 (3.68%), extensive laparoscopic adhesiolysis in 5 (3.07%) bowel resection in 2 (1.25%), laparoscopic myomectomy in 1 (0.61%), and bladder resection in 1 (0.61%). Surgery proceeded to laparotomy in 6 patients (3.68%). Major surgical complications included bowel perforation, severe pelvic pain 1 week after laparoscopic excision, and temporary numbness of the right side of the perineum in 1 patient each. Minor postoperative complications included urinary tract infection in 3 patients and port site infections that resolved with oral antibiotic therapy in 2 patients. Follow-up was 37.82 (20.09; 34.74-40.92) months. Surgical excision of endometriosis had a positive effect on endometriosis-related symptoms. Four pain scores were reduced, with statistically significant differences ( $p < .001$  and  $p < .05$ ): dysmenorrhea, pelvic pain not related to menstruation, dyspareunia, and dyschezia. The positive effect of surgical excision on patient quality of life was demonstrated by a statistically significant difference on the EQ-5D index ( $p < .001$ ) and the EQ-5D VAS ( $p < .001$ ). Thirty-two (20%) patients underwent a second procedure after the index surgery. Endometriosis stage affects the probability of requiring further surgery because of recurrent symptoms. There was evidence of endometriosis at histologic analysis in only 13 (40.62%) patients who required further surgery. It was concluded that laparoscopic excision of endometriosis significantly reduces pain and improves quality of life as measured by both the EQ-5D index and the EQ-5D VAS, with a low complication rate.

## CONCLUSION

The recurrent symptoms like dysmenorrhoea, dyspareunia and abdominal pain were reduced in the subjects who underwent surgical treatment for endometriosis one year after surgery.

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