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## Recurrence Rate after "One-Step" CO<sub>2</sub> Fiber Laser Vaporization versus Cystectomy for Ovarian Endometrioma: A 3-Year Follow-up Study.

Candiani M<sup>1</sup>, Ottolina J<sup>2</sup>, Schimberni M<sup>1</sup>, Tandoi I<sup>1</sup>, Bartiromo L<sup>1</sup>, Ferrari S<sup>1</sup>.

### Author information

#### Abstract

**STUDY OBJECTIVE:** To assess postoperative recurrence rates in patients with endometriomas managed by either "one-step" CO<sub>2</sub> fiber laser vaporization or cystectomy.

**DESIGN:** Retrospective study with prospective recording of data.

**SETTING:** University hospital.

**PATIENTS:** One hundred twenty-five patients with symptomatic endometriomas.

**INTERVENTIONS:** Patients underwent a standardized laparoscopic stripping technique (group 1) or cyst vaporization with CO<sub>2</sub> fiber laser (group 2). After surgery, patients were incorporated in a prolonged surveillance program with periodic clinical follow-up to check for recurrence of the cyst and/or recurrence of symptoms. Endometrioma recurrence was defined as an ovarian cyst (>10 mm) with a typical aspect arising on the operated ovary identified by transvaginal ultrasound.

**MEASUREMENTS AND MAIN RESULTS:** The primary endpoint was the comparison of recurrence rates between the 2 groups. The secondary endpoint was the evaluation of endometriosis-related pain recurrence in the 2 groups. Other endpoints selected for analysis included the identification of risk factors for the recurrence of endometrioma and of endometriosis-related symptoms. The mean follow-up was 29 ± 13 months (range, 13-49). Recurrence of ovarian endometriosis was recorded in 6.3% of patients (n = 4)

treated with cystectomy and in 4.9% of patients (n = 3) managed with CO<sub>2</sub> fiber laser (p = .74). Recurrence of endometriosis-related pain was observed in 5 patients (7.8%) in group 1 and in 6 patients (9.8%) in group 2 (p = .67). Mean endometrioma diameter > 5 cm at the time of surgery was identified as the only independent poor prognostic indicator for cyst recurrence (p = .008; odds ratio [OR], 2.21; 95% confidence interval [CI], 1.19-3.32). Moreover, the presence of deep endometriosis at surgery (p = .032; OR, 4.60; 95% CI, 1.14-18.57) and discontinuation of hormonal treatment (p = .015; OR, 3.18; 95% CI, 1.25-8.06) were independent poor prognostic indicators for pain recurrence.

**CONCLUSION:** This study suggests that one-step CO<sub>2</sub> fiber laser vaporization may be effective for endometrioma treatment because it is associated with recurrence rates comparable with those occurring after cystectomy, with the advantage of being an ovarian tissue-sparing technique.

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**KEYWORDS:** CO(2) fiber laser; Cystectomy; Endometrioma; Recurrences

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