

# Laparoscopic treatment of ovarian endometrioma

## *One year follow-up*

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*Summary:* Thirty-six women with ultrasonographic diagnosis of ovarian endometrioma (bilateral in nine of them), have been treated laparoscopically. After the surgical procedure the patients were assigned to one of the following regimes: Gn-RH-a for 3 months, oral contraceptives if they wanted to avoid pregnancy, or nothing. The follow-up consisted in 1-3-6-12 months ultrasound. The first recurrences were observed at the 6-month ultrasound with an overall recurrence rate after 12 months of 11%. Improvement of pain symptoms occurred in 87% of the patients and fertility rate was 45%.

*Key words:* Endometriosis; Endometrioma; Laparoscopy; Gn-RH analogue.

### INTRODUCTION

Laparoscopic treatment of ovarian endometriomas is currently the most rational approach to this pathology; in fact, medical therapy alone has been proved to be ineffective even if associated with cyst fluid aspiration (<sup>1,2</sup>).

Many studies have shown that laparoscopic surgery based on complete stripping of the cystic wall, bipolar coagulation or Laser vaporization is followed by resolution, but none of these surgical tools

and techniques have been demonstrated to be more effective (<sup>3,4</sup>).

Although ovarian endometriomas may be asymptomatic, most of the time they are associated with pelvic pain and/or infertility.

The aim of the current study is to evaluate by ultrasound the effectiveness of laparoscopic treatment of ovarian endometriomas one year after surgery. In addition, remission of symptoms, pregnancy and recurrence rates were investigated.

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### MATERIALS AND METHODS

A group of 36 patients with a total of 45 ovarian endometriomas (nine patients had bilateral endometriomas) underwent laparoscopic treatment for this pathology. The mean age was 29.2 years (range: 20-41 years). Diagnosis was based on gynecological examination, ultrasonography and serum CA-125 assay. The mean diameter of the cysts at ultrasound was 45 mm

Table 1. — Mean diameter of the cysts and mean preoperative value of serum CA-125.

Pre-operative serum CA-125 (IU/ml)	39.1 (range: 8,9-122)
Diameter of the cysts (mm)	45 (range: 17-100)

(range: 17-100 mm); the mean value of serum CA-125 was 39.1 IU/ml (range: 8.9-122 IU/ml) (Table 1). Thirty-three patients (91.7%) complained of pain symptoms; 13 patients (36.1%) had been infertile at least for one year and 23 patients (63.9%) did not desire pregnancy.

During laparoscopy, the stage of endometriosis was assessed according to the revised AFS classification system (5), after an accurate exploration of the pelvis; 20 patients (55.5%) were classified stage III, 16 patients (45.5%) stage IV.

In case of ovarian adhesions, adhesiolysis was performed in order to make the ovary free. Once the cyst was penetrated with a 5-mm trocar the chocolate fluid was aspirated and the cystic cavity rinsed and flushed with saline solution using an "aqua-purator" system, trying to avoid any spillage from the cyst. When the cystic contents accidentally flowed out, an accurate irrigation of the pelvic cavity was carried out. The inner wall of the cyst was inspected to ensure the absence of any possible malignancy and the cystic wall was then removed (stripping).

All the ovaries were left open after cystectomy and peritoneal implants were coagulated by bipolar electrocoagulation. At the end of the procedure 100 ml of dextran 40% solution (Solplex 40; Sifra, Italy) was left in the pelvic cavity.

Eighteen patients (50.0%) received 3-months therapy with GnRH-a depot (goserelin, triptorelin, leuprolide acetate) after surgery; seven patients (19.5%) asked for an oral contraceptive to avoid pregnancy, and the remaining 11 (30.5%) patients did not receive any medical therapy.

All patients underwent clinical and ultrasonographic follow-up, performed 1-3-6-12 months after laparoscopy. Women were interviewed about relief of pelvic pain and pregnancy rate was calculated 12 months after laparoscopy.

## RESULTS

All laparoscopies were uneventful and, in all patients but one, a complete stripping of the cyst wall was possible. In this patient, due to the considerable ad-

hesion of the cyst to the ovary which was preventing a complete stripping, the inner cyst was coagulated. Pathology reports of the specimen always confirmed the intra-operative diagnosis of ovarian endometriomas. At the ultrasonographic controls performed 1-3 months after surgery, all women showed a normal volume and morphology of the treated ovary. At the 6-month control, an endometrioma was detected in five patients. In one case the cyst was bilateral and one of the ovaries involved had not been previously surgically treated. So our true recurrence rate was 11.1% (5 cysts out of 45 surgically treated). Among the women that had a normal ovary, at the 6-month ultrasound, 11 of them underwent only surgical treatment, seven patients received oral contraceptives and 13 patients were treated with GnRH-a.

All the recurrences were present in women with stage IV endometriosis who were further treated with GnRH-a. Three of these women had pelvic pain whereas the other two were asymptomatic. In one of these five patients a complete stripping of the cystic wall was not possible during surgery. All the five women underwent a second laparoscopy for treatment of the endometrioma and in all cases the relapsing cysts were smaller than the native one.

Twenty-nine (87.9%) patients out of 33 that had had pelvic pain, reported significant improvement of pain symptoms at the time of the 6-month follow-up. In the group that denied having any pain symptoms six months after laparoscopy, ten (34.5%) women underwent only surgical therapy while seven patients (24.1%) received oral contraceptives and twelve (41.4%) women were treated post operatively with GnRH-a. Four patients (12.1%) did not find any relief of their pain.

Five (45.4%) patients of the infertile group became pregnant, four of them had been previously treated with GnRH-a.

Beside the patients that had had a second surgery for a new cyst, we performed a second-look laparoscopy in five of them and in all cases we found a normal ovary with no adhesions.

## DISCUSSION

The first ultrasonographic control performed one month after surgery showed a normal ultrasonographic morphology of both ovaries suggestive of a reassessed ovary in all patients.

In our study, laparoscopic cystectomy has been confirmed to be a safe and effective treatment of ovarian endometriomas. Due to the fact that one cyst originated from an ovary not previously treated, the recurrence rate based on our surgical cases, at 6-month ultrasound was 11.1%.

Recurrence of endometriomas does not seem to be associated with the size of the cyst but it may be conditioned by the thickness and consistency of the cyst wall. The attempt to perform the stripping of an adherent cyst wall can sometimes cause major bleeding; thus eliminating further definitive laparoscopic treatment.

Moreover, recurrences sometimes appear in the contralateral ovary, developing from a new or missed endometriotic ovarian implant at first laparoscopy. The risk of recurrences arising from missed implants could be reduced or eliminated by multiple ovarian punctures or, according to our initial experience, by the use of endoscopic ultrasonographic probes during laparoscopy, so that even very small endometriotic cysts can be discovered (< 10 mm).

Regarding ovarian morphology and size determined by ultrasound at 1-3-6 and 12 months, we did not find any differences between patients that underwent only surgery and patients who underwent surgery and GnRH-a. therapy or that received OC.

The higher fertility rate in patients who received GnRH-a. therapy could be ex-

plained by the influence of the drug on other causes of infertility rather than endometriosis (<sup>6, 7, 8</sup>).

In conclusion our experience confirms the effectiveness of laparoscopic treatment of ovarian endometriomas and the quick recovery of morphology and function of the treated ovary, even if left open after surgery. However, prospective studies are necessary to verify the role of intraoperative and perioperative adjuvants to alleviate pain symptoms and improve fertility rates and to define the role of the medical therapy.

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