

Impact of chronic cervicitis on recurrent pelvic inflammatory disease

Summary

Pelvic inflammatory disease (PID) is a sexually-transmitted infection (STI); and, as such, sometimes it is difficult to treat because of partner(s) issues. PID generally is accompanied by chronic cervicitis (CC). We observed that in spite of patients strictly complying with their therapy, there are some individuals that develop recurrent disease; and we tried to establish a relationship between CC and its recurrence in such patients. This study was prospectively designed. Patients in one group were treated with electrocauterization and another group who did not receive this therapy was retrospectively compared by reviewing their clinical records. Patients with CC and PID who did not undergo electrocauterization had 82% recurrence rate compared to those who underwent electrocauterization, who showed a 24% recurrence rate. We concluded that patients who had CC with different manifestations and who underwent electrocauterization or cervical fulguration developed significantly less recurrence of PID.

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Introduction

Pelvic inflammatory disease (PID) is a well known entity described within sexually transmitted infections (STI),¹ and its recurrent presentation is a cause for chronic pelvic pain,²⁻⁴ ectopic pregnancy,²⁻⁴ and infertility.²⁻⁴

Therapy should be administered to the patient and her sexual partner(s), considering the likelihood of promiscuity;^{3,5} also, therapy must last for at least two weeks because of the life cycle of the causative agent (*Chlamydia trachomatis*) which goes from trophozoite to elementary body, reticular body, and to trophozoite once again.⁶

Nonetheless, we observed that in spite of complying with indications and taking preventative measures against STIs, patients may present with PID again.⁷ This may be related to the presence of chronic cervicitis,⁸ in which case some response to antibacterial agents could have been documented, but finally they may need some form of invasive therapy.⁷

Having observed these patients with recurrent PID and knowing they complied with therapy and took preventative measures against STDs, they commonly presented with chronic cervicitis (CC), related with ectropion likely caused by the use of oral contraceptives.^{9,10} Nabothian cysts and cervical erythroplasia were also found, but the latter was not present in cases with squamous metaplasia.⁵ Nabothian cysts may also be diagnosed using ultrasonography (Figure 1).

On the basis of this observation, we proposed the following hypothesis: CC may lead to PID even with proper therapy and in its recurrent form; and therapy of CC may reduce or prevent the development of new cases of PID.

Therapy for CC consisted in electrocauterization or fulguration of the uterine cervix.¹¹

Therefore, this is how the study was performed.

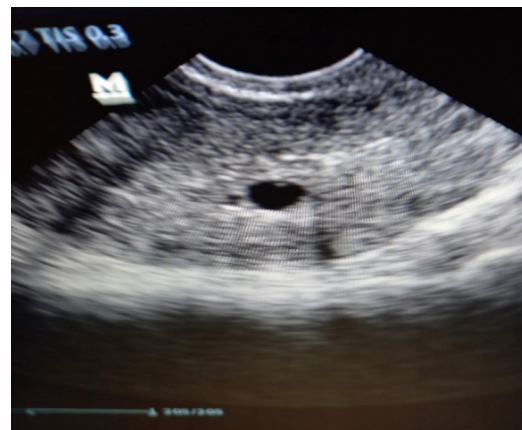


Figure 1 Ultrasonography: Nabothian cyst.

Material and methods

This investigation is a prospective longitudinal study and also a retrospective cross-sectional study.

Up to 100 patients were recruited from January 2010 until November 2020 (ten years and eleven months). These patients were selected from office visits and clinical record review from Hospital Nacional Arzobispo Loayza, Montesur Clinic, and Corpac Medical Center.

Inclusion criteria: Patients with recurrent PID complying with therapy and indications for prevention of STIs, with ectropion caused by oral contraceptives, Nabothian cysts, and cervical erythroplasia, all related with chronic cervicitis.^{7,9,10}

Exclusion criteria: Endometriosis, prior pelvic surgery with infectious complications in the postoperative period and chronic pelvic pain syndrome due to causes other than PID.

Participants were divided in two groups: A and B

Patients in group A (retrospective cross sectional arm) were the first 50 women diagnosed with recurrent PID. They complied with therapy and with prophylactic measures against STIs, aiming to avoid chronic cervicitis related with ectropion caused by oral contraceptive use (Figure 2), Nabothian cysts (Figure 3), and cervical erythroplasia (Figure 4). These patients **DID NOT** undergo cervical electrocauterization. They were selected on the basis of clinical record review and compliance with the aforementioned inclusion criteria.



Figure 2 Ectropion.



Figure 3 Nabothian cysts.



Figure 4 Cervical Erythroplasia.

Patients in group B (longitudinal prospective arm) were 50 women diagnosed with recurrent PID who complied with therapy and with

prophylactic measures against STIs. They had chronic cervicitis related with ectropion caused by oral contraceptive use, Nabothian cysts, and cervical erythroplasia. These patients **DID** undergo cervical electrocauterization.⁸

All patients gave their informed consent for having electrocauterization performed.

Electrocauterization was performed as follows: Only Nabothian cysts were cauterized when the remaining cervical epithelium was macroscopically intact; or radial or complete cauterization was undertaken in cases of ectropion or cervical erythroplasia (Figure 5). Two months after the procedure, the appearance of the cervix was healthy (Figure 6).



Figure 5 Cervix after electrocauterization.



Figure 6 Cervix two months after electrocauterization.

Electrocauterization was performed two days after the end of the menstrual period in order to avoid performing the procedure in case of pregnancy when dealing with patients with regular periods, or after results of B-HCG testing in case of oligomenorrhea. The procedure was started in the posterior area of the cervix aiming to avoid that bleeding from the upper area would generate difficulties for cauterization of the posterior area.^{8,12}

Follow-up in both groups was performed for one year after initial treatment and patients were observed particularly looking for occurrence of PID; in which case they were give appropriate therapy.

Electrocauterization was performed using El Superfrecator equipment, which is a multifunctional electrosurgical generator with monopolar and bipolar modes, using only a needle when used in monopolar mode (Figure 7).



Figure 7 Super Frecator electrocautery.

Results

Group A:

Patients in the retrospective cross-sectional arm

Number of patients: 50

Average age: 29years

Average number of pregnancies: 3.6

Patients who had vaginal delivery: 32

Patients who underwent Cesarean section: 18

See Table 1

Table 1 General characteristics

General characteristics	Group A	Group B
N° of patients:	50	50
Average age, years	29	31
Average number of pregnancies	3.6	3.7
Patients who had vaginal delivery	32	35
Patients who underwent Cesarean section	18	15

Patients with PID during the study: 41

Patients with no PID episodes during the study: 9

See Table 2

Table 2 PID during the study

PID during the study	Group A	Group B
Patients with PID during the study	41 (82%)	12 (24%)
Patients with no PID episodes during the study	09 (18%)	38 (76%)

Patients were distributed as follows:

Patients with one episode of PID during the study: 24

Patients with two episodes of PID during the study: 11

Patients with 3 episodes of PID during the study: 6

See Table 3

Table 3 Patients with recurrent PID episodes after therapy

Patients with recurrent PID episodes after therapy	Group A	Group B
1 PID episode during the study	24 (48%)	10 (20%)
2 PID episodes during the study	11 (22%)	02 (4%)
3 PID episodes during the study	06 (12%)	00 (0%)

Group B:

Number of patients: 50

Patients in the prospective longitudinal arm

Average age: 31years

Average number of pregnancies: 3.7

Patients who had vaginal delivery: 35

Patients who underwent Cesarean section: 15

See Table 1

Patients with PID during the study: 12

Patients with no PID episodes during the study: 38

See Table 2

Patients were distributed as follows:

Patients with one episode of PID during the study: 10

Patients with 2 episodes of PID during the study: 2

Patients with 3 episodes of PID during the study: 0

See Table 3

Discussion

We presented in the introduction the following hypothesis: chronic cervicitis (CC) might be the cause of properly treated and recurrent pelvic inflammatory disease (PID); and treating CC with electrocauterization would reduce or prevent a new episode of PID.

However, this mode of therapy is now not frequently used in CC, since medical conservative management is preferred rather than invasive therapy, given that CC is a benign condition (7). However, this study has proven that there is a significant success rate in patients with recurrent PID in whom electrocauterization was performed.

When analyzing the results, we observed during follow-up an important 3.5-fold reduction in PID recurrence up to one year after therapy, compared to those women who did not undergo electrocauterization. This result is intuitively statistically significant, and it shows that the aforementioned procedure works and is quite useful.

Conclusion

Uterine cervix electrocauterization in cases of chronic cervicitis within a pelvic inflammatory disease context significantly reduces recurrence of treated PID.

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Conflicts of interest

The authors did not report any potential conflicts of interest.

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