THE RATIONALE FOR TREATMENT OF CERVICAL LESIONS (HPV ± CIN)

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Summary: In the laser surgery service of the 2nd Deparment of the Obstetric and Gynecologic Clinic of the University of Rome "La Sapienza", from October 1984 to March 1987, we have treated with CO_2 laser surgery (vaporization and conization) 228 patients affected with cervical lesions (HPV±CIN). The choice of the treatment must be based on two parameters: site and extension of the lesion. The results we have obtained with CO_2 laser vaporization (201 cases) are most satisfactory (92%); patients have been followed-up from two to twenty-six months.

As far as the CO_2 laser conization is concerned (27 cases), patients were followed-up from two to twenty-two months and the percentage of success was 96.1%. The Authors evaluated also the side effects of the CO_2 laser surgery.

INTRODUCTION

The philosophy in the treatment of CIN is that the neoplastic cells do not invade the stroma and do not spread to the lymphatic channels and lymph nodes, and, therefore, that any type of complete local destruction is a satisfactory treatment. Over the years, the introduction of colposcopy and the demonstration that destructive methods are very effective in selected cases, has led to increasingly conservative treatments (fig. 1).

In the last decades, the therapeutic trend switched from radical surgery toward simple less invasive methods, such as cone biopsy, and then again toward physical destruction (instead of cold knife cone).

At present, the methods of treatment available, fall basically into three categorie ([1]):

- surgical excision
- destructive therapy
- pharmacological therapy.

Surgical excision sometimes takes the form of simple biopsy, usually of tailored conization, rarely of hysterectomy. Physical destruction may be done with cryosurgery, diathermic electrocoaguation and laser surgery.

As for pharmacological therapy, best results are obtained with interferon and retinoids.

Each method has advantages and disadvantages, and the choice depends upon operator experience and facilities available.

From the biological point of view, as we know from the molecular hybridization studies, most CIN are caused by virus, but it is not easy to distinguish neoplastic cells from cytopathic virus effects.

This is why we believe that it is necessary to treat all lesions, independently from their grade, including also those with only morphological evidence of virus (HPV) ([2]).

The choice of treatment must be based on two parameters: site and extension of lesion.

Therefore, our therapeutic trend is the following:

- Conization or hysterectomy:
  Endocervical lesion.
- Conization and destructive physical therapy:
  Endocervical lesion and extent exocervical lesion.
- Destructive physical therapy and/or pharmacological therapy:
  Exocervical lesion.

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Table 1. – *Preneoplastic lesions of the cervix laser CO_2 vaporization. Results.*

Lesion type		Follow-up	Success rate
HPV	107	101 (94.4%)	94 (93.1%)
HPV+CIN_{1-2-3}	55	52 (94.5%)	48 (92.3%)
CIN_{1-2-3}	39	37 (94.9%)	34 (91.9%)
Total	201	190 (94.5%)	176 (92.6%)

1 group = Mean age 28 years
2 group = Mean age 31 years
3 group = Mean age 32.5 years

It is necessary to underline some general considerations regarding destructive techniques: a correlation between cytology, colposcopy and histology must exist because vaporization does not make any tissue available for histological interpretation. Fertility is preserved: cervical incompetence or stenosis are actually very rare. Treatment could be carried out in outpatient clinic and a strict follow-up is indispensable ([3, 4, 5, 6, 7, 8, 9, 10]).

MATERIAL AND METHODS

From October 1984 to March 1987, we have treated 201 patients with laser vaporization (tab. 1):

107 representing 53.2%, suffered from HPV alone;

55 representing 27.4%, suffered from HPV associated with CIN, independently from its degree;

39 representing 19.4%, were suffering from CIN at various degrees.

The average age of the first group was 28; of the second, 31; and of the last, 32 and a half.

In the same period we have treated, 27 patients (average age 32) with laser-conization (tab. 2). Our follow-up includes the first control after two months, the second after six months and the following controls every six months.

On a routine basis, we perform the following diagnostic examinations:

- exo-endocervical cytology;
- colposcopy;
- microcolposcopy and punch biopsy.

The machine we use for laser treatment, Coherent 400 mod. 451, is attached to a Zeiss photocolposcope (focal distance 250 and 400 mm).

According to site, lesion vaporization is performed in the exocervical lesion at a moderate power density: 700 to 1000 Watt/per square centimeter with a minimum effective spot diameter of 1.5 to 2 millimeters.

With our technique (fig. 2), we prefer to reach 10 millimeters in depth and 7 millimeters in thickness. Thus, we can be sure to include also the very deep glandular crypts, although, according to Anderson's studies, with a 5.2 millimeter depth, the lesion is adequately treated in 99.7% of cases ([11, 12, 13]).

If the lesion is situated in the cervical canal, and is not accessible to colposcopy, we usually perform a tailored conization after microcolposcopic control ([14, 15, 16, 17, 18, 19, 20]).

Presently, the main indications remain the endocervical lesion and those cases in which there is a discrepancy between cytology, colpocsopy, and histology.

In such cases, a correct histological diagnosis is fundamental. It is, therefore, important to stress that laser produces such limited thermic artifacts that the excised cone (200-300 μ) can easily be interpreted by the pathologist.

Table 2. – *Preneoplastic lesions of the cervix laser CO_2 vaporization. Side effects.*

	No.	%
Bleeding *	7/190	3.7
Liquorrhea	12/190	6.3
Pain	5/190	2.6
Cervical stenosis	1/190	0.5
Total patients	** 19/109	10.0

* 2 patients had intraoperative bleeding.
** 4 patients had multiple side effects.

Table 3. – *Preneoplastic lesions of the cervix laser CO_2 conization. Results.*

Lesion type		Follow-up	Success rate
CIN_1+HPV	1	1 (100.0%)	1 (100.0%)
CIN_2	4	4 (100.0%)	4 (100.0%)
CIN_2+HPV	4	4 (100.0%)	4 (100.0%)
CIN_3	10	9 (90.0%)	8 (88.9%)
CIN_3+HPV	8	8 (100.0%)	8 (100.0%)
Total	27	26 (96.3%)	25 (96.1%)

Mean age 32 vears.

Site	Lesion	Modality
Cervix	Exocervical	Vaporization → depth 10 mm thickness 7 mm
	Endocervical	Tailored conization → after microcolposcopic topography

Fig. 1. – Preneoplastic lesions of the cervix treatment modality.

RESULTS

The results we have obtained with CO_2 laser vaporization are most satisfactory. In fact, we have 92.6% recovery (tab. 1).

Patients have been followed-up from two to twenty-six months. If we consider the three groups of patients separately, i.e., those with HPV alone, those with HPV plus CIN and those with CIN_{1-2-3} degrees, the results show no statistically significant difference.

If we evaluate separately each degree and although the number of patients is rather small, the same can be said about the third group with CIN alone.

We wish to point out that in our therapeutic failures, there has been no progression in lesions.

It may be useful to mention that in three cases, while CIN has been cured, the viral lesion remained. In such cases, we found it necessary to give complemental pharmacological therapy.

Carbon dioxide laser vaporization of the cervix was well-tolerated by our patients and anesthesia was never used.

Main side effects of CO_2 laser vaporization were the following (tab. 3):

- 3.7% of patients presented bleeding (intraoperative bleeding in two patients);
- 2.6% suffered from pelvic pain but this did not stop treatment;
- 1 patient suffered from cervical stenosis and was treated with Hegar dilatation. No case of pelvic infection occurred.

As far as the CO_2 laser conization is concerned, patients were followed-up from two to twenty-two months.

The percentage of success was 96.1 (tab. 2). Only two patients suffered from complications (post-surgery bleeding). In one, a vaginal pack was necessary, but neither transfusion nor hospitalization were needed.

There were no cases of cervical stenosis nor of pelvic pain and no secondary infections.

We do hope to obtain more and more encouraging results in the future. This will be possible when screening will be done integrating current techniques, such as cytology and colposcopy with more sophisticated ones, such as microcolposcopy and molecular hybridization (fig. 3).

Although we studied this for just over two ears and had a relatively small number of patients, after practicing other destructive therapies, our experience stimulates us to continue with laser treatments perfecting both our theoretical and practic knowledge.

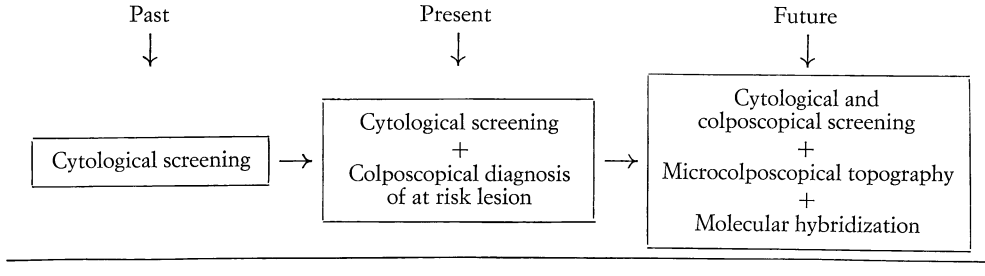

Fig. 2.

Although all methods of physical destruction are effective, I would like to insist on the fact that success depends also on the skill and proper knowledge of the natural history of cervical intraepithelial neoplasia of the specialized physician.

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