

# Vulvar and penile HPV lesions: laser surgery and topic anaesthesia

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*Summary:* Treatment of genital warts (HPV lesions) by Laser-surgery was performed in 90 patients and 90 male partners under topical anaesthesia with 1-3 gr EMLA cream and in 45 patients and 45 males (control groups) under 1-2 ml 2% Carbocaine infiltration. EMLA cream was applied to warts 5-18 minutes (median=7) before operation. Pain from application of anaesthetic and Laser surgery was significantly less ( $p < .001$ ) in the groups treated by EMLA. Side effects were minimal in the EMLA groups. The results suggest that EMLA cream could be the anaesthetic of choice in Laser surgery of genital warts.

*Key words:* HPV lesion; Laser surgery; Topic anaesthesia.

## INTRODUCTION

In the last 20 years the importance of the HPV group in the study of human genital oncogenesis has increased. In fact, it has proved that the HPV group is heterogeneous and some specific viral types have been isolated from precancerous and cancerous cervical, vulvar and penile lesions.

Thus, the HPV male and female genital pathology requires both effective prevention and early diagnosis and treatment by the gynecologist, since it is a STD (Sexually Transmitted Disease) (1, 2, 3, 4).

Today, due to its characteristics, CO<sub>2</sub> Laser surgery is the method of choice in the treatment of this pathology, as it offers

the possibility of operating under colposcopic guide, which increases precision, and at the same time it reduces scarring both in the short and long terms. Furthermore, patients generally do not need hospitalization.

Sometimes extensive genital lesions may require general anesthesia; however, problems arise when choosing the anesthetic for the local preparation of genital mucosa. Today, various injectable local anesthetics are available and they are commonly used for an optimal local anesthesia of the genital mucosa to be treated by Laser surgery or other destructive therapies.

However, due to the sensitiveness of female and male genital regions, infiltration itself is often intolerable and always causes discomfort and pain in various degrees.

For this reason it is important to use topical products which reduce the incidence of local pain in order to increase compliance with the treatment, which in

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itself implies psychological difficulties for the patients<sup>(5, 6, 7, 8)</sup>.

The aim of the present research was to widen our previous study<sup>(9)</sup> on the evaluation of pain and analgesic efficacy of EMLA, compared to infiltration anaesthesia in Laser surgery of HPV male and female genital lesions.

## MATERIALS AND METHODS

Between May 1990 and September 1991 we studied 90 female patients with HPV vulvar pathology and 90 male partners with HPV genital pathology; both groups were to undergo Laser surgery after topical application of anaesthetic EMLA (Eutectic Mixture of Local Anaesthetic, ASTRA AB, Sweden) containing 25 mg of Lidocaine and 25 mg of Prilocaine per gram.

Each condylomatous lesion had been previously assessed by histologic examination. The age of patients was 18-65 years (median 28.4) and that of partners was 18-52 (median 28.2).

Applying colposcopic standards, vulvar lesions were divided as follows: 41 (45.5%) florid condylomatosis, 19 (21.1%) papular, 11 (12.2%) condylomata acuminata, 4 (4.4%) flat or macular condylomata and 15 (16.6%) mixed forms.

As to the topography of the lesions the most frequently affected sites were the following: 31 (34.4%) labia minora, 18 (20%) fourchette, 13 (14.4%) meatus, 9 (10%) introitus and hymen, and 19 (21.1%) cases presented infection in multiple sites.

The lesions of the 90 male partners were grouped into: flat or macular 27 (30%) cases, papular 23 (25.5%) cases, condylomata acuminata 21 (23.3%) cases and mixed forms 19 (21.1%) cases. Infection was located in the following regions: frenulum 24 (26.6%) pts, corona glandis 18 (20%) pts, shaft 7 (7.7%), sulcus 3 (3.3%) pts, meatus 1 (1.1%), glans 1 (1.1%) pts, and in multiple sites 36 (40%) pts (Table 1).

All patients gave their consent to participation; the criterion for exclusion was proven hypersensitivity to the components of the cream.

Anaesthetic EMLA cream was applied to all patients before Laser-surgery: EMLA doses were of 1-3 grams according to the extent of the lesions; application time ranged between 5 and 18 minutes (median = 7) before surgery. In order to assess the degree of satisfactory anaesthesia, we performed a "pinch test" every three minutes up to total insensitivity of the affected region.

The control groups consisted of 45 women and 45 men suffering from vulvar and genital HPV condylomata acuminata respectively. The control groups were homogeneous in type and

Table 1. - *Clinical data of EMLA groups.*

Total number of patients		Males 90		Females 90	
Age					
Range		18 - 52		18 - 65	
Median		28.2		28.4	
Type of warts	Flat or macular	27	30	Florid	41
	Papular	23	25.5	Papular	19
	Cond. acuminata	21	23.3	Cond. acuminata	11
	Mixed	19	21.1	Flat or macular	4
				Mixed	15
Location of warts	Frenulum	24	26.6	Labia minora	31
	Corona glandis	18	20	Fourchette	18
	Shaft	7	7.7	Meatus	13
	Sulcus	3	3.3	Introitus-hymen	9
	Meatus	1	1.1	Multiple sites	19
	Glans	1	1.1		
	Multiple sites	36	40		

site of lesions and before surgery underwent perilesion 2% Carbocaine infiltration in doses between 1 and 2 ml according to the extent of the lesions.

For each group we established the possible local reactions of the anaesthetized mucosa: erythema, pallor and/or oedema which were rated as absent, mild, moderate or severe.

Laser surgery was performed with a Laser CO<sub>2</sub> Coherent System 451 equipment, at a density of 16 w and a depth of 2 mm in continuous wave.

In order to evaluate pain caused by the application of the cream or by infiltration we used a Visual Analogue Scale (VAS) (10), on which "0" indicates no pain and 100 intolerable pain.

Pain was also rated by a 4-degree verbal scale, no pain, mild, moderate and severe pain. Also pain experienced during Laser surgery was assessed both by VAS and verbal scale. Treatment was suspended in case of moderate or severe pain and additional EMLA cream was locally applied in the above-mentioned doses at a time interval of 3-8 minutes (median = 5) or, alternatively, a second infiltration of 2% Carbocaine in doses of 0.5-1 ml was carried out.

## RESULTS

EMLA cream application proved painless in the groups studied: all patients reported absence of pain or mild pain. In the group of women treated with EMLA cream, mean VAS score was 4; for the male group it was 3. As for the control groups, infiltration of 2% carbocaine gave a mean VAS score equal to 78 for men (6 pts reported absence of pain or mild pain and 39 moderate or severe pain) and 72 for women (8 pts experienced no pain or slight pain and 37 moderate or severe pain) (Fig. 1).

From a statistical point of view, the different degrees of pain in the groups during EMLA cream application and Carbocaine infiltration was significant ( $p < 0.01$ ). Of the 90 male partners treated with EMLA, we assessed the following local reactions to the anaesthetic: 19 (21.1%) presented moderate erythema and 10 (11.1%) slight pallor and or oedema; as for the 90 female patients we recorded

Table 2. - Local reactions to the anaesthetic.

Local reactions	EMLA				Carbocaine			
	Males %		Females %		Males %		Females %	
Erythema	19	21.1	23	25.5	9	20	13	28.8
Pallor and/or Oedema	10	11.1	13	14.4	32	71.1	35	77.7

slight erythema in 23 (25.5%) cases and pallor and/or oedema in 13 (14.4%). In the control groups, erythema was assessed in 9 (20%) men and in 13 (28.8%) women, whereas oedema and pallor were recorded in 32 (71.1%) men and 35 (77.7%) women (Table 2). During Laser surgery, pain was less in the groups anaesthetized ( $p < 0.02$ ) with EMLA cream, compared to the groups treated with infiltration for both the VAS and the verbal pain scores. Mean VAS values were 12 (range 1-53) for men and 18 (range 1-62) for women in the EMLA groups; for the control groups mean VAS scores were 23 (range 1-67) for men and 28 (range 1-73) for women (Fig. 1).

In the 10 (11.1%) men and 12 (13.3%) women who experienced moderate or severe pain, treatment was stopped and a second local application of EMLA cream was given; further infiltration of Carbocaine was necessary for 11 (24.4%) men and 9 (20%) women (Fig. 2).

## DISCUSSION

EMLA cream is a pharmaceutical product containing Lidocaine and Prilocaine in equal parts; due to its composition, this anaesthetic can be evenly spread over the mucosa. EMLA cream application is easy and painless; besides, the cream limits tissue oedema and does not cause side effects.

A mean application time of 7 minutes offers a better anaesthetic efficacy. A se-

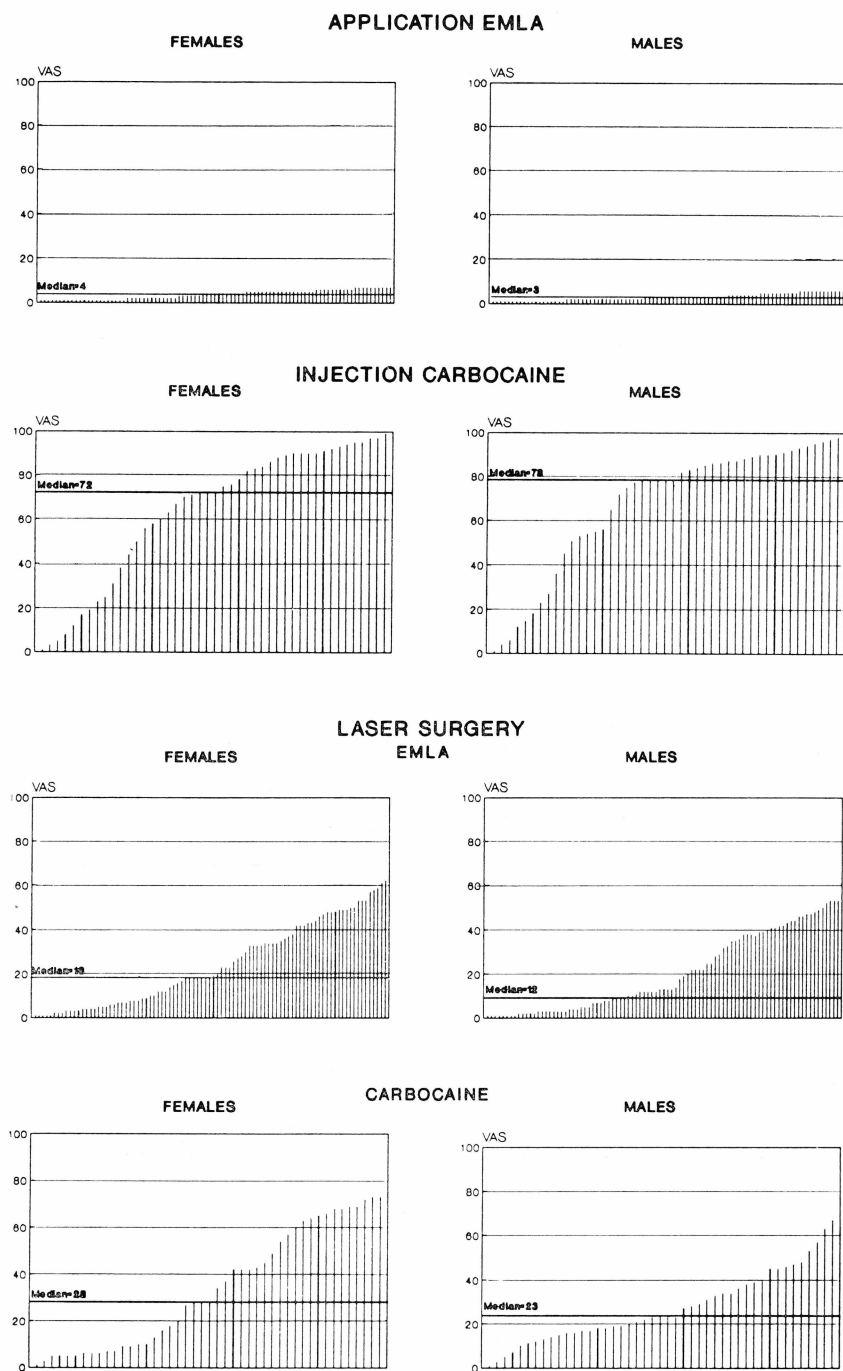
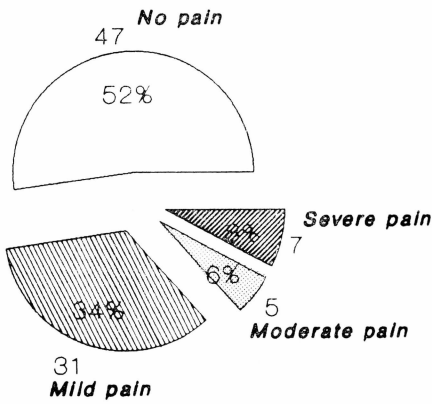


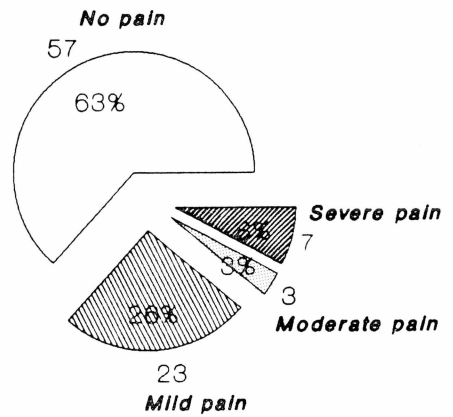
Fig. 1. — VAS values during application of EMLA and injection of Carbocaine and during the subsequent surgery. The median score is indicated by the orizontal line.

# EMLA

## Females

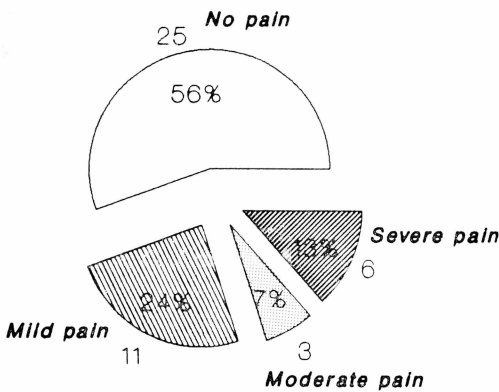


## Males



# CARBOCAINA

## Females



## Males

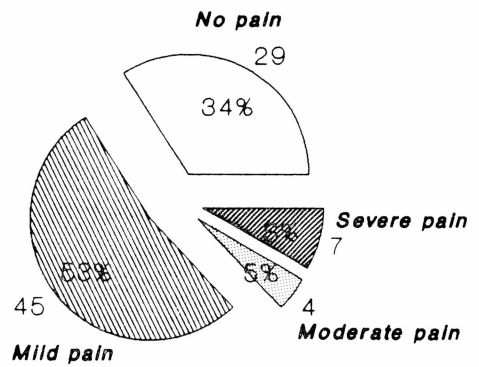


Fig. 2. — Evaluation of the degree of pain experienced by patients during Laser-surgery.

cond application is needed if the anaesthetic does not reach the underlying layers when the external part of the mucosa entirely absorbs the cream<sup>(11)</sup>; in this case, a second application of EMLA cream allows complete treatment with no further inconvenience<sup>(12)</sup>.

On the contrary, local anaesthetic infiltrations have a number of significant disadvantages which are to be considered in view of the treatment: pain is often severe, the formation of oedema in the affected region and sometimes moderate bleeding which may absorb laser energy all these factors reduce the efficacy of treatment.

Thus, a pharmaceutical product like EMLA, which limits side effects and reduces pain due to treatment, is extremely helpful for the patient who is psychologically able to tolerate better the stress caused by treatment. Therefore, EMLA cream can be considered the anaesthetic of choice for the Laser-surgery of HPV male and female genital lesions.

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