Curettage of Molluscum Contagiosum in Children: Analgesia by Topical Application of a Lidocaine/Prilocaine Cream (EMLA®)

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The analgesic effect of a lidocaine/prilocaine cream (EMLA®) for the curettage of molluscum contagiosum was evaluated in 55 children aged 3–14 years. Five to 25 molluscs per child were covered with a maximum of 10 g EMLA cream one hour before the operation. The pain was rated as either none or slight by 93% of the children while the physician's assessment was 96%. On a 100 mm Visual Analogue Scale (VAS) where 0 represented no pain and 100 severe pain, the median rating by the children was 3 mm. Mild vasoreactions such as pallor, redness or oedema were observed locally at the treated skin areas. The results show that EMLA® cream provided effective local anaesthesia for the curettage of molluscs. (Received September 25, 1987.)

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A common treatment of molluscum contagiosum is curettage (1, 2). It has been difficult to achieve satisfactory local analgesia in children with extensive lesions, and therefore general anaesthesia has often been required. A pilot study has indicated that EMLA® cream may be useful as a local analgesic (3). The present study was performed to evaluate the analgesic efficacy and adverse reactions of EMLA cream when used as a topical anaesthetic prior to the curettage of molluscum contagiosum in children.

METHODS

The study was an open trial performed at two outpatient dermatology departments. It was approved by the Ethical Committee of Sahlgrenska Hopital, Göteborg. In accordance with the recommendations of the Helsinki Declaration, patients and parents were informed about the details of the trial and gave their oral consent to participation.

Patients

55 children, 14 boys and 41 girls, scheduled for the curettage of at least five molluscs were included in the trial. Their ages ranged from 3 to 14 (median 6) years, and their weights from 15 to 46 kg. Twenty children had a history of atopic dermatitis. Premedication did not take place. The molluscs were located in all body areas.

Anaesthetic and surgical procedure

One hour before the operation, a maximum of 10 g of EMLA® cream[1] was applied to the molluscs. One gram of the cream was sufficient to cover a skin area of approximately 2.5×2.5 cm. The cream was covered with an occlusive dressing (Tegaderm®). The presence of eczema around the molluscs

[1] Composition: lidocaine 25 mg, prilocaine 25 mg, Arlatone® 289 19 mg, Carboxypolymethylene 10 mg and purified water to 1 g.

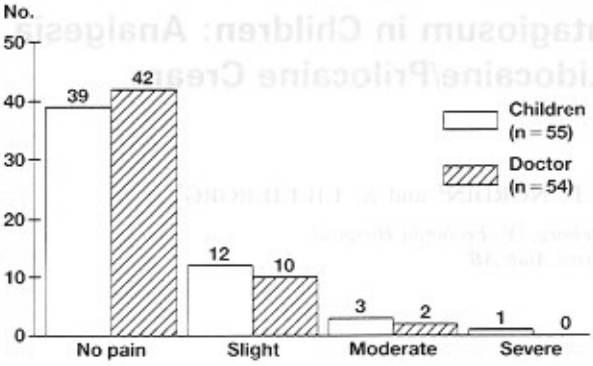

Fig. 1. Verbal rating of the pain of curettage.

before application of the cream was recorded in 29 of the 55 children. After 60 min application the cream was wiped off, the skin was disinfected and the molluscs were removed with a closed chalazion curette. A total amount of 1–10 g cream was used on skin areas from 6–60 cm^2. The number of molluscs was 5–25 and 31/55 children had more than 15 lesions. In all patients the curettage commenced within five minutes after the cream had been wiped off.

Assessments

After removal of the cream the physician examined the skin for the presence of pallor, redness, oedema or other local reaction. The severity of the reaction was rated as slight, moderate or severe. Comparisons of the incidence of local reactions in children with and without atopic dermatitis were performed using Fischer's exact test (two-tailed).

The overall pain during the treatment was rated by the child and physician on a four-point scale as none, slight, moderate or severe. The child also assessed the pain on a 100 mm horizontal unlabelled Visual Analogue Scale (VAS) where 0 mm represented no pain and 100 mm severe pain.

RESULTS

Eczema was present at at least one site before application of the cream in 9 patients out of 29 in whom the assessment was made. Seven out of eleven children with atopic dermatitis and 2 out of 18 non-atopic children had eczema around the molluscs ($p = 0.01$).

Analgesic efficacy

In 93% of the children the pain was rated as either none or slight. The physicians rated the childrens' pain as none or slight in 96% of the operations (Fig. 1). Fifty-one out of the fifty-five children were able to understand the instructions how to use the VAS. The median VAS score for the 51 patients was 3 mm (Fig. 2). One four-year-old boy drew his own scale

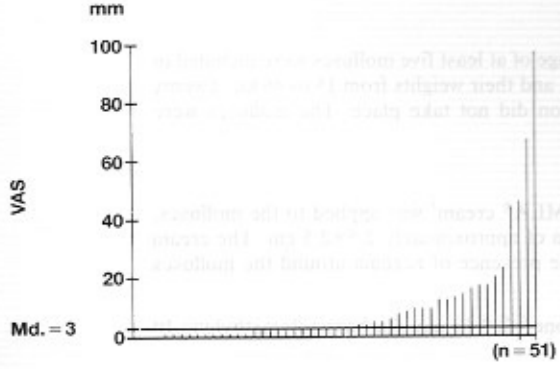

Fig. 2. Individual pain scores on the VAS. Four children were unable to understand how to use the scale. Md. = median.

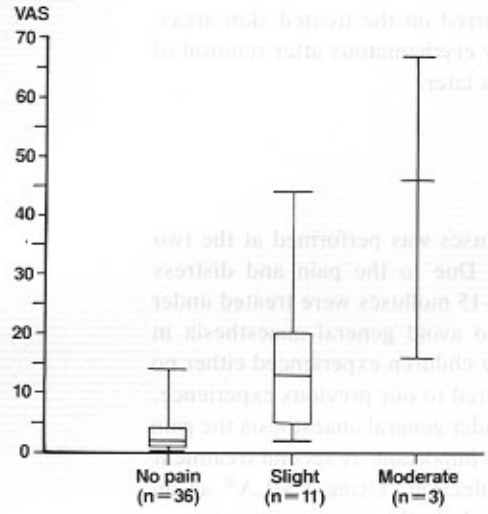

Fig. 3. Boxplot showing the distribution of the VAS scores in relation to the verbal pain evaluation by the child. The "box" indicates the upper and the lower quartiles and the median. The bars indicate the maximum and the minimum score. Only one child experienced severe pain and marked 97 on the VAS (not indicated in the plot).

(118 mm long) and made a mark at 2 mm. The score is included in the results at this value. The distribution of the VAS scores in relation to the verbal pain assessment of the child is shown in Fig. 3.

In one child the physician was unable to distinguish between pain and distress and therefore made no judgement of pain. Treatment was interrupted after curettage of four molluscs in another, extremely nervous girl.

Local reactions

No general side effects or serious local reactions were noted. In total, 397 separate locations were evaluated for the presence of local reactions (Table I). Apart from the reactions to the cream listed in Table I, local redness of the skin in contact with the plastic dressing (Tegaderm®), was observed at 46 application sites in 11 patients. Four of these had a history of atopic dermatitis. There was no difference in the incidence of redness, pallor and oedema between patients with and without atopic dermatitis ($p>0.05$).

Other local reactions observed were petechiae in the groin or axilla of three patients with atopic dermatitis. One of them also complained of itching in the groin.

According to the parents, one four-year-old girl developed long-standing redness and oedema of that part of the skin which had been in contact with the cream. No redness remained at a follow-up visit three weeks later. In a challenge test two months after the first treatment, the only reaction observed was slight pallor.

Table I. *Local reactions*

Summary of all 397 assessments

	Severity					
Reaction	Slight	Moderate	Severe	Not assessed	Total	%
Redness	46	47	16	3	112	28
Pallor	63	97	2	1	163	41
Oedema	9	36	0	1	46	12

In one child postinflammatory hyperpigmentation occurred on the treated skin areas. The corresponding areas had been moderately to severely erythematous after removal of the cream. The pigmentation had disappeared two months later.

DISCUSSION

Before the introduction of EMLA® the curettage of molluscs was performed at the two clinics with ethyl chloride spray as the sole analgesia. Due to the pain and distress connected with the procedure children with more than 10–15 molluscs were treated under general anaesthesia. For many reasons it is desirable to avoid general anaesthesia in children, whenever possible. The fact that over 90% of the children experienced either no or slight pain with EMLA is an obvious advantage compared to our previous experience. In the case of children who would not have been treated under general anaesthesia the gain in confidence in the physician after a painless procedure is important. A second treatment is often necessary, due to the natural course of the infection. Using EMLA® as an alternative, substantial time and cost savings were also made in the operating theatre.

The assessment of pain in children is a difficult task. When planning this trial, a search of the literature revealed only one study regarding the use of a VAS in young children. Among 100 children with juvenile chronic polyarthritis failure to describe the pain from the disease on a VAS was uncommon after the age of five (4). In our study the physicians' ratings of the pain were in accordance with the childrens' ratings and there was a high correlation between the two methods used for pain assessment (Fig. 3). Furthermore, there was no correlation between the number of molluscs curetted and the pain which would have been expected if the distress and nervousness to a greater extent influenced the pain score. Fifty-one out of fifty-five children were able to understand how to use the Visual Analogue Scale (VAS). Three of the children who failed to do this were four years old and one was five years old.

We are convinced that the two methods used for pain assessment give a very good description of the pain experienced by the children. These methods are useful in children from the age of about four years.

The incidences of local pallor and redness observed are in accordance with those observed in earlier studies of children (5) and adults (6) without skin disease. In the current trial no difference in the incidence of local redness, pallor and oedema was observed between patients with and without atopic dermatitis. The local reactions did not cause any discomfort. In all but one patient the pallor or redness of the skin disappeared in a couple of hours. The vasoactive effects of EMLA® cream has been studied by Juhlin & Rollman (7). They applied EMLA® for 1 to 60 min to the lichenified patches of the skin of adult patients with atopic dermatitis. Application for up to 15 min was followed by blanching. After exposure to the cream for 30–60 min an erythema developed. An increasing incidence of erythema with longer application times has also been described in patients without skin disease (6).

Three patients with atopic dermatitis developed petechiae at the sites of application of EMLA in the groin or axilla, whereas other treated skin areas of these children were not affected. We are currently not able to explain the mechanism of this reaction. The low threshold for irritant reactions in atopic patients, the thin skin and the occlusion in the intertriginous areas may all have contributed to a petechial reaction.

In conclusion, EMLA® cream at the dosage and application time used in this trial provided effective local anaesthesia for the curettage of molluscs in children. The local reactions observed were mild and reversible and caused little or no discomfort. EMLA®

could be a safe and useful alternative to general anaesthesia for most children with extensive molluscs.

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