



To Study and Analyze Various Methods For Treatment of Planter Corn

KEYWORDS

Planter corn, Planter hyperkeratosis, Heloma durum, Helomamolle.

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ABSTRACT

A corn is a cone shaped localized hyperkeratinisation of the skin. It has a hard central core with the base on the surface and apex pointing inwards. The corn occurs due to undue pressure, chiefly affecting the toes and feet usually over a bony prominence. This was a prospective study of 90 cases with symptomatic plantar corn. These patients were randomly distributed in three groups for different treatment modalities. Each group contained 30 patients. Group A: Excision of corn and suturing of wound, Group B: Excision of corn and allow the wound to heal by secondary intention and Group C: Use of 40 % salicylic acid solution local application thrice a day for three weeks. Those patients who were not cured were switched over to other treatment modality. All patients were followed at the end of 1st and 6th month. It could be concluded from our study that with good compliance and proper technique of application, the use of local application of 40% salicylic acid solution is a simple and effective technique for the treatment of corns. However the greatest success in treating corns is achieved with a particular modality, is compliment with advice on proper foot care and choice of appropriate footwear and strict patient compliance.

Introduction:

A corn is a localized hyperkeratinisation of the skin.¹ It has a hard central core which occurs due to undue pressure, chiefly affecting the toes and feet usually over a bony prominence.² It appears as circumscribed cone shaped horny thickening with the base on the surface and apex pointing inward, which presses deeply into the dermis causing pain and sometimes inflammation.³ There are two subtypes of corn: the hard corn (heloma durum) and soft corn (helomamolle).⁴ The hard corn, most common type, appears as a dry, horny mass of hyperkeratinised tissue with hard central core.⁴

The principles of treatment includes: providing symptomatic relief, determining the mechanical etiology and formulation of treatment plan. This includes padding and modification of footwears and if conservative management fails then surgery for corns. The common complications are- ulceration, foot infection and discharging sinuses, osteomyelitis due to deep penetrating infection, foot and toe deformities due to continuous pain during walking.

A methodical study was conducted to compare different treatment modalities for this common problem.

METHODS: This was a prospective study of 90 cases with symptomatic plantar corn. The study was conducted during August 2012 to August 2014 with clearance from ethical committee.

Inclusion criteria: 1) Patient with age group 18-60 years, 2) Corn size: 0.5-1.5 cm, 3) Patient with keratotic lesion with complaint of pain.

Exclusion criteria: 1) Keratotic lesion like callosities, 2) Lesions like viral warts, 3) local infected abscess.

A detailed history and thorough clinical examination was done and recorded in Performa. The necessary consent was taken and participants were categorized in three groups randomly.

Each group contained 30 patients. Group A: Excision of corn and suturing of wound, Group B: Excision of corn and allow the wound to heal by secondary intention and Group C: Use of 40 % salicylic acid solution local application thrice a day for three weeks. Those who were not cured were labeled as treatment failure and offered other treatment modality. These patients were excluded from study. Follow up of the patient was recorded up to complete cure and then at the end of 1st month and at the end of 6th month.

The data analysis done by using SPSS 19.0 statistical software. We used Fisher's exact test to find the significance between the treatment groups.

OBSERVATIONS AND RESULTS:

Table 1: Comparative study of treatment modality.

Treatment modality	No. of patients	No. of corns treated	Type of corn		Result		Recur-rence	
			hard	soft	Cure	Not cure	1 st month	6 th month
Group A	30	31	16	15	31	0	0	3
Group B	30	30	13	17	30	0	1	5
Group C	30	33	15	18	25	8	0	1
Total	90	94	44	50	86	8	1	9

In this study it was observed that out of 90 patients, 27 had history of previous treatment for corns in the form of corn cap application (25 patients) and excision of corn (2 patients). Thirteen patients had history of local injury at the corn site and 5 patients had medical history (3 patients with hypertension and 2 patients with diabetes mellitus) who were on regular oral medication with good disease control.

The mean corn size determined was between 0.76-0.82 cm various groups. The size in Group A patients ranged from 0.50 – 1.20 cm ,had required less number of days (average 7.42 days) for treatment while Group B (corn size 0.50 – 1.20 cm) and Group C (corn size ranged from 0.50 – 1.50 cm.)has taken more days (average 9.62 and 10.38 days respectively).

The results of various treatments modalities was analyzed based on whether "corn cure" or "corn not cured" (failure of the primary treatment modality) and recurrence criteria. In Group A and B, all corns treated were cured (100%). However, in Group C, 8 (24.24%) patients were reported as not cured and those who were not cured were offered other treatment modality and were excluded from study.

On follow up after cure, at the end of 1st month only one patient (3.33%) from Group B developed recurrence while at 6th months, three patients (9.68%) from Group A, five patients (16.67%) from Group B and one (3.03%) from Group C showed recurrence.

DISCUSSION:

This is a prospective study, conducted during period of August 2012 to August 2014 on 90 patients. In this study, some patients had more than one corn or bilateral corns in their feet, hence we have treated total of 94 corns in 90 patients. We had divided our patients into three groups with 30 patients each.

Out of the 90 patients, 5 patients had medical history. Diabetic motor neuropathy predisposes foot for deformity and development of corn. So when elderly patient present with corn and who is not a diagnosed case of diabetes mellitus, it is always advisable to evaluate the patient for diabetes mellitus and then treat the corn. In present series 2 known diabetic patients with on regular controlled treatment and 3 patients with HTN were registered. None of them had foot deformity.

In Group A, for 31 corns of 30 patients, the average duration required for healing was 6.61 days in smaller (0.5 – 0.9 cm) corns and 8.22 days in larger (1-1.5 cm) corns with a variation between five to ten days with 100% cure rate. Pain and absence from work were the major concerns of the patients in this group. In Group B, the wound took an average of 8.52 days for smaller corns and 10.71 days for larger corns to heal, which was more than the time required for Group A patients. In this group 30 corns were treated in 30 patients with a 100% cure rate. In Group C, 33 corns were treated in 30 patients. Here only 25 (75.76%) patients were cured. The average duration required to cure was 10.38 days and ranged from 8.33 days to 12.43 days for smaller and larger corns respectively. It was observed that the Salicylic acid solution applied in this group resulted in removal of the whole corn tissue in layers and also gave good pain relief with numbers of merits over Group A and Group B. The only demerit is the long duration of application. The corns which showed failure to

primary treatment were advised alternate treatment method randomly. All these patients were cured after conversion of treatment modality.

The cure rate was 100% in Group A with no recurrence at 1st month and only 3(9.68%) at the end of 6th months. In Group B also the cure rate was 100%, however the recurrence rate was high with 1 (3.33%) at 1st month and 5 (16.67) at the end of 6th months. In Group C the cure rate was lowest with only 25 out of 33 corns were cured. Here of the 25 cured patients, only one recurred at the end of 6th months and none at 1st month of follow up. It was observed that the recurrence rate was comparable in all the three groups (P= 0.160)

Here it is important to note that the patients who were not cured in Group C, had history of previous treatment for the corns and had poor compliance to the previous as well as present treatment modality which could be the probable reason for low cure rate. Patients with good compliance in Group C had good results with very low recurrence rate.

The other reasons observed for the recurrence was improper foot wear and foot care, improper application of salicylic acid solution, continuous weight bearing activities which gave pressure over foot.

In the total study population none of these patients had neuropathy or foot deformity which exerts excess of pressure over bony prominences. All these patients were advised well fitted soft sole footwear's, insoles, proper foot care.

CONCLUSION

Hyperkeratosis simply means thickening of the skin for the strengthening skin in areas of friction or excessive pressure. We have treated our patients by either surgical or topical salicylic acid solution application. Salicylic acid solution is more satisfactory in the management of corn. It is cost effective and patient can afford with respect to cost of surgical procedure, number of post excision dressing, and antibiotic, analgesic, anti-inflammatory, and/or wound healing promoting drugs with number of merits over Group A and Group B. It has fewer side effects and complications. However, it needs regular application till corn is treated completely. Also Group C has lowest recurrence rate as compared to Group A and Group B.

It could be concluded from our study that with good compliance and proper technique of application, the use of local application of 40% salicylic acid solution is a simple and effective technique for the treatment of corns. However the greatest success in treating corns is achieved with a particular modality, is compliment with advice on proper foot care and choice of appropriate footwear and strict patient compliance.

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