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RESEARCH ARTICLE

FALKNORS NEEDLING TECHNIQUE IN THE TREATMENT OF PALMOPLANTAR WARTS: A NOVEL THERAPEUTIC APPROACH

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Abstract

Objectives: The aim of the study is to evaluate the safety and efficacy of Falknor's needling procedure for the treatment of Palmoplantar warts.

Materials and Methods: Between July 2022 and June 2023, an open-label, prospective non-randomized study was conducted on patients attending the dermatology outpatient department of a tertiary care hospital. A study group comprised of 50 patients with multiple palmoplantar warts was selected as subjects. The index wart of eligible patients was punctured several times with a 26 gauge needle to produce a beefy red wound. Adverse effects were noted and study participants were followed up for 6 months.

Results: Out of 50 patients, complete resolution was seen in 38[76%] patients and partial response in 7 [14%] patients, while 5 [10%] patients developed secondary infection.

Conclusion: Falknors needling for treatment of palmoplantar warts gives a higher rate of complete resolution after a single session with less recurrence rate.

Limitations: small sample size, no comparison group.

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Introduction:-

Warts are common skin infections caused by the Human papillomavirus virus which targets basal keratinocytes of epidermis and results in benign epidermal proliferation. Management of warts is challenging due to variable clinical courses. At present, there are various modalities of treatment options available for the treatment of warts but no single treatment modality is completely effective in all patients.

We attempted the needling technique in the treatment of palmoplantar, as a method of immunotherapy that leads to clearance of warts by exposure of viral antigens to the immune system[1]. The principle of Falknor's needling technique is to stimulate the immune response and induce cell-mediated immunity[2].

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Methods:-**Study Design:**

An open-label, prospective nonrandomized study was carried out between July 2022 and June 2023 at the Government college and hospital in Kakinada Andhrapradesh after obtaining clearance from the institutional ethics committee. A total of 50 patients who were clinically diagnosed to have single or multiple palmoplantar warts were included in the study. All subjects were screened for HIV and found to be negative. Counseling was done in their own language, and prior written informed consent was obtained from study participants. IM Tetanus toxoid of 0.5ml was given for previously non-immunized patients.

Inclusion Criteria:

1. Age >18 years-<60 years
2. Patients with single or multiple Palmoplantar warts who have given consent.

Exclusion Criteria:

1. Pregnancy and lactation
2. Keloidal tendency
3. Immunosuppression
4. Local inflammation or infection.

Procedure:-

The procedure is performed under strict aseptic conditions, the Index or suitable wart was selected and cleaned with surgical spirit, then infiltrated with 2% lignocaine [Figure1]. Wart is pared superficially with the NO.11 blade and a surgical needle of 26 gauge is used to puncture through the lesion repeatedly up to the level of subcutaneous tissue. Needling is continued till no more resistance is felt from the epidermis, the endpoint is to produce a beefy red wound[Figure 2]. Bleeding is controlled by applying pressure and a sterile gauze dressing is applied patient was instructed to keep the dressing dry for the next 24 to 48 hours. Followup visits are scheduled at 1,2,3 Months. The efficacy of the procedure and side effects were assessed and noted at each visit. Patients were followed up for the next 6 months for any recurrence.



Figure 1:- Instrument tray containing 1. lignocaine 2. Insulin syringe 3. Gauze piece 4. 26 gauge needle.



Figure 2:- End point - bleeding points with beefy red wound.

Results:-

Total 50 patients attended for scheduled visits of follow-up. The mean age group of the study population is 26 ± 4.5 years. Out of total 50 patients 32[64%] were female and 18[36%] were males [Table 1]. 8[16%] patients in the study population had single warts and 42[84%] patients had multiple lesions [Table 2]. 32[64%] patients had plantar warts, 6[12%] of them had palmar warts and 12 [24%] had both palmoplantar warts [Table 3]. 38[76%] patients out of 50 patients had complete resolution of lesions and partial clearance was seen in 7[14%] patients, 5[10%] patients developed secondary infection [Table 4] [Figure 3&4]. The average duration of clearance of warts is 2.16 ± 1.2 months recurrence was seen during the follow-up period of six months in any patients.

Table 1:- Gender distribution among study population.

Male	18[36%]
Female	32[64%]
Total	50

Table 2:- Number of lesions in study population.

Single wart	8[16%]
Multiple wart	42[84%]
Total	50

Table 3:- Type of warts in study population.

Palmar warts	6[12%]
Plantar warts	32[64%]
Both palmoplantar warts	12 [24%]

Table 4:- Response to treatment observed in patients.

Complete resolution	38[76%]
Partial resolution	7[14%]
No resolution	5[10%]

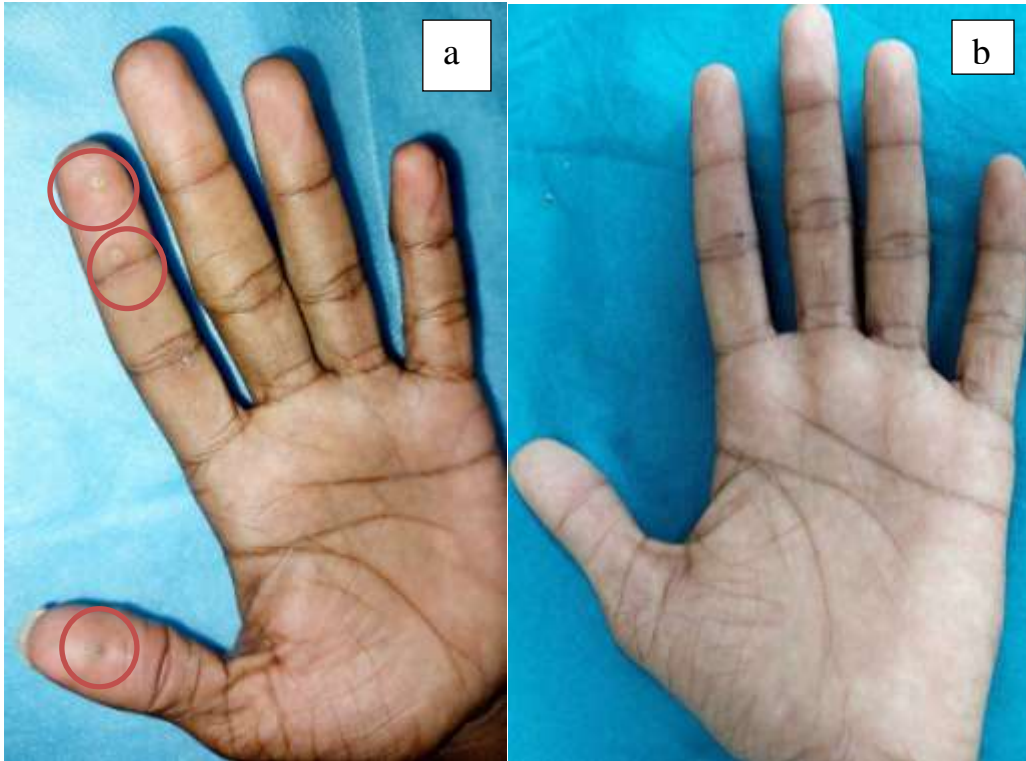


Figure 3:- a) Palmar warts before the procedure. b) Palmar warts have resolved completely at 3 months after the procedure.



Figure 4:- a) warts over wrist before the procedure. b) warts over wrist have resolved completely at 3 months after the procedure.

Discussion:-

Human papillomavirus infections usually are benign but can lead to social and psychological discomfort. There is an increased risk of transmission of the virus from active lesions potentiating the requirement of effective treatment in viral warts[3]. At present various modalities of treatment options are available for the management of warts but none are completely effective in all patients. Treatment options include (I) destructive modalities with keratolytic agents like salicylic acid, TCA(Trichloro acetic acid), Podophyllin, cantharidin, and imiquimod. (II) Intralesional MMR, vitamin D3, Acyclovir. (III) surgical modalities include surgical excision, curettage, electrocautery, and radiofrequency ablation. (IV) Other modalities like cryotherapy, photodynamic therapy, ablative lasers, and systemic agents like retinoids, and cimetidine[4]. Success rates of the above-mentioned methods vary from 65 to 85%. Side effects of surgical methods especially in the case of palmoplantar warts lead to disfiguring scars and increased pain during the procedure[4].

Cell-mediated immunity plays a pivotal role in the treatment of warts[5]. The needling technique stimulates the immune system by exposing the viral antigens and results in the resolution of warts including distant and untreated warts. Auto implantation targets the induction of cell-mediated immunity to virus-simulating natural processes by introducing a high load of viral antigens to the immune system[6]. Auto inoculation in comparison with the needling technique has the drawback of giving two slits which increases morbidity in patients.

The current study widens the scope of immunotherapy by the needling technique as a novel therapeutic option in the treatment of palmoplantar warts with fewer side effects, lower recurrence rates, cost-effectiveness, and easy to perform. In our study, complete resolution of lesions was seen in 76% of patients and 14% of patients with a single session of treatment. These results are on par or better with previous studies conducted with the needling technique. In a study done by Kumari et al on the Falknors needling technique complete resolution was seen in 70.7%, partial response in 6.1%, and no response in 23% of patients [7]. Another study done by Baveja S et al showed complete resolution of warts in 68.29%, and partial response in 17.1% of patients[8].

Advantages:

1. Inexpensive
2. Relatively painless compared to intralesional MMR and vit D3 Injection
3. Treatment completed in a single session
4. Resolution of sub ungual and distant warts
5. Early response and less chance of recurrence
6. No scarring and Post inflammatory hyper/hypo pigmentation

Limitations:

1. The sample size is small
2. There is no comparison group

Conclusion:-

Immunotherapy with Falknors needling in the treatment of multiple palmoplantar warts can be considered as a novel treatment option as it is inexpensive has fewer side effects, and gets completed in a single session with better response and less recurrence.

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Conflict of Interest-

None.

Ethical approval-

The study was approved by the Institutional Ethics Committee

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