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Comparative Study on management of Corn foot in patients with blood borne virus (Hepatitis B) Minimally invasive technique vs excision biopsy

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ABSTRACT:

Background: Corn foot is a very common condition which occurs predominantly in any given population. This study looks into resolving extended follow up postoperatively hence reducing the healing time and ensuring rapid recovery which is of utmost essence in patients with blood borne virus.

Materials and Methods:A randomised prospective study was conducted over 6 months. 60 patients with chronic pain in plantar aspect of foot associated with swelling for aparticular period of time (who were Hepatitis B positive) were included in the study.

Results: The patients' ages varied from 15 to 45 years. After routine investigations, the patients were divided intotwo groups. One group of patients underwent minimally invasive technique of excision and another group underwent excision biopsy. The newer technique proved to be more effective than excision biopsy on basis of symptomatology and appearance of wound especially in patients with blood borne virus as it is less invasive than excision biopsy.

Conclusion: This study proves that identifying the actual surface area that is to be excised shows better post operative results and faster wound healing. Minimally invasive technique for corn foot excision is easily adaptable and results derived are much better than normal excision and biopsy especially in patients with blood borne virus.

Keywords:-Cornfoot, excision, minimally invasive, HBV

I. INTRODUCTION:

Corn foot or clavus is a very common condition which occurs over most prominent pressure points in the plantar aspect of foot. This minimally invasive technique for corn foot excision is aimed at resolving extended follow up post operatively hence reducing the healing time and ensuring rapid recovery as it is of essence in patients with blood borne virus. A comparative study of 60 cases has been discussed to analyse and understand age at time of occurrence, size of the corn foot, post operative follow-up in both groups and number of days for the wound to completely heal.

II. METHODOLOGY :

A comparative study on 60 patients who presented with chronic pain in plantar aspect of the foot, associated with a swelling of varying size has been discussed below . The study was conducted in Chettinad Hospital and Research Institute from April 2021 to September2021.The patients were provisionally diagnosed as Corn Foot who are Hepatitis B positive , and all necessary investigations were done. The patients were divided into two groups where 30 patients were planned for minimally invasive technique for excision and the rest were planned for excision biopsy.

Inclusion criteria:

- All patients who present to the OPD with corn foot/callosity and who were positive for Hepatitis B.

Exclusion criteria:

- Non Compliant patients
- Hematological disorders
- Recurrent corn foot

PROCEDURE (METHODOLOGY):

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1. Identification of corn and marking the hardcallosity around

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2. Callosity around the corn shaved in at angential angle

3. Then the actual size of the corn under lying the callosity exposed

4. Elliptical incision made

5. Corn excised

6. Wound closure done

Expected duration of the subject participation: Expected duration of procedure: 30 min
Follow up: Patients were asked to come after 5 days for the first look and then on day7 for the second look and plan for suture removal.

III. RESULTS:

It was observed that patients who underwent minimally invasive technique for excision of corn foot , the healing was exceptional and postoperative period was uneventful when compared to patients undergoing excision biopsy. 60 out of 60 patients came for followup.
In the followup the results were analyse dusing :

1) SEX DISTRIBUTION:
MALE: 80%
FEMALE: 20%

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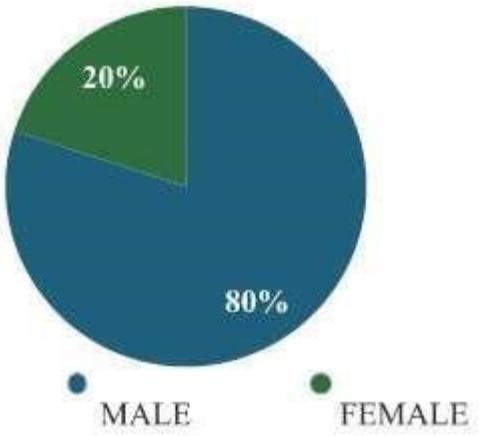
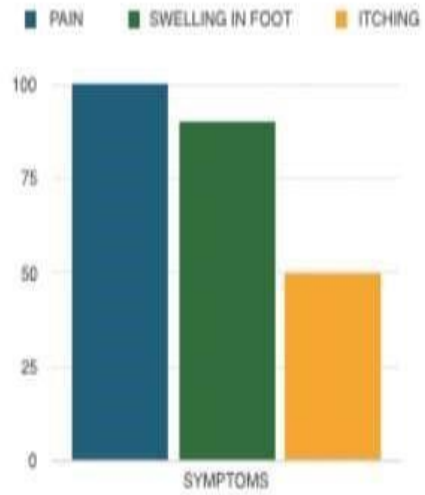


GRAPH 1:Graph showing Age Predominance

In this particular study it was seen that corn foot was more predominant in males than in females.

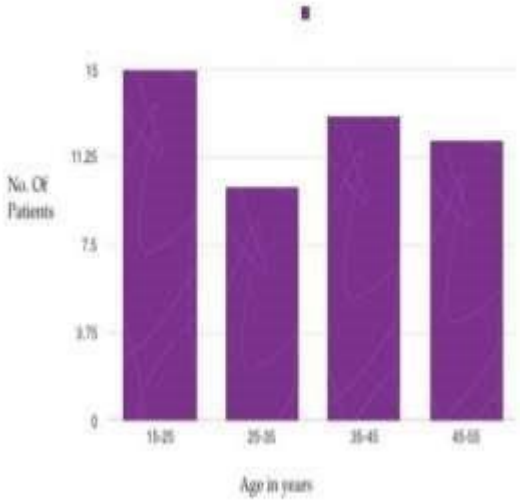


GRAPH3:Graph showing Symptom Predominance

Out of 60 patients,

1) Pain: All patients presented with pain in the plantar aspect of foot.
2) Swelling in plantar aspect: 55 patients out of 60 presented with swelling.
3) It ching: 46 patients out of 60 patients presented with it ching over the swelling in the plantar aspect.

2) AGE DISTRIBUTION :



GRAPH 2: Graph showing Age Predominance

The most common age group in which corn foot was commonly seen is 15 to 25 years of age.

3) PRESENTATION OF SYMPTOMS:

RATE OF HEALING AFTER 5 DAYS AND 7 DAYS

The rate of healing was assessed based on two different factors:

A) Visual analogue scale
B) Appearance of the wound

In group A patients who underwent minimally invasive technique for corn foot excision, 29 out of 30 were asymptomatic. They had no complaints of pain. 1 out of 30 patients complaints of mild discomfort on walking which ranged to around3-4 outof10in visual analogue scale.

On basis of appearance of wound : on 5th operative day all patients had healthy wounds without any post operative complications. On day 7 all wounds in **group A patients** were healthy and healed and all patients were planned for suture removal.

In group B patients who underwent excision for corn foot , 23 out of 30 patients were symptomatic. They complained of pain and

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increased discomfort onwalking.7 out of 30 patients also complained of on and off serous discharge from the wound.

On the basis of appearance of wound : on 5th operative day 7 out of 30 patients have discharge from the wounds. 3 patients underwent wound dehiscence leading to premature removal of sutures and healing of the wound by secondary intention.

On 7th postoperative day in group B patients 3 patient underwent wound dehiscence and wound healing by secondary in tention , 20 patients underwent removal of sutures on 7th day and 7 patients underwent removal of sutures on10th day.

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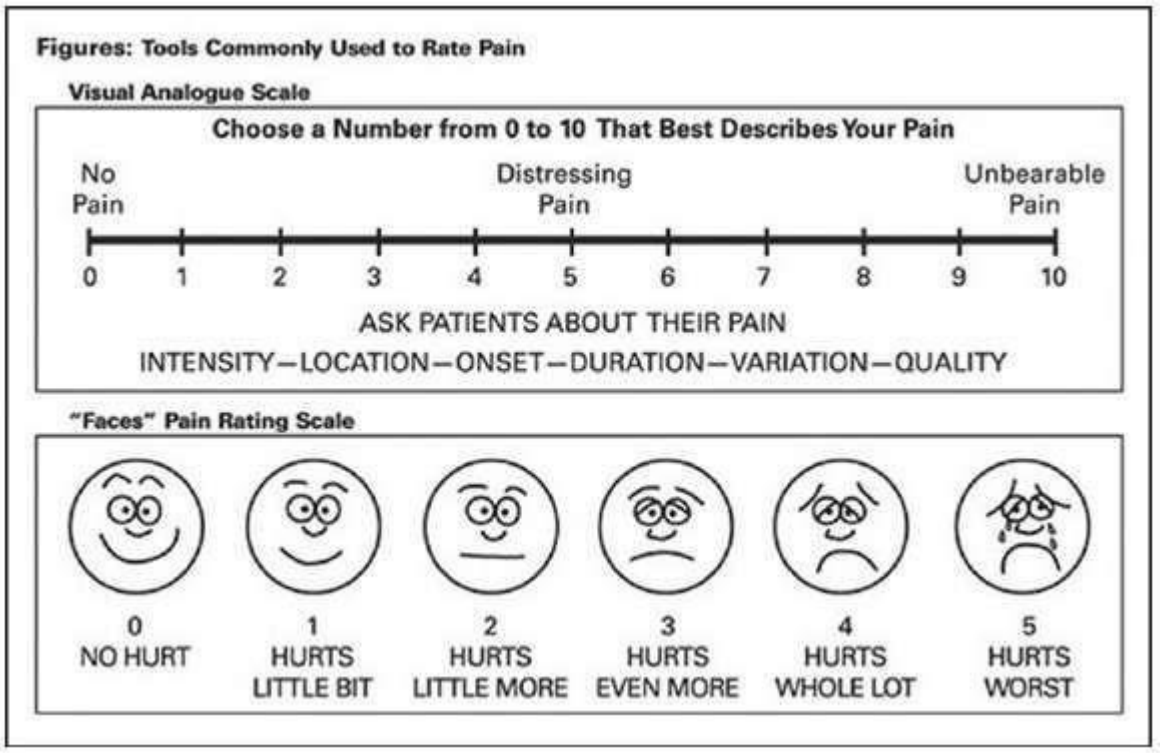

FIGURE1:VISUALANALOGUESCALE(VAS)

TABLE1:Table of comparison between both the groups

S.NO	GROUP A : GROUPB: WIDE LOCALEXCISION MINIMALLYINVASIVETECHNIQUE
SEXPREDOMINANCE	MOREPREDOMINANTIN MALESTHAN IN FEMALESIN BOTH GROUPS
AGEPREDOMINANCE	MOSTCOMMONLYSEENINAGEGROUP15-25YEARSOFAGEGROUP
SYMPTOMPREDOMINANCE	MOSTCOMMONPRESENTATIONWAS SWELLINGANDPAININTHEPLANTARASPECTOFTHEFOOT
	RATE OFHEALING
ON 5TH AND 7THPOSTOPERATIVE DAY	

Colloquialterms	Location
Jeweler'scallus	Thumb

Weightlifter'scallus	Callosities over the palmarmetacarpophalangealjoints	
(A)SYMPTOMS	NOSIGNIFICANTCOMPLAINTS1OUT OF30:MILD DISCOMFORTWHILEWALKING(3-4outof10)	7 out of 30 : serousdischarge 3outof30:wounddehiscence 23 out of 30 : pain and increaseddiscomfortonwalking(610outof 10)
(B) SUTUREREMOVAL	**30OUTOF30:**ON7THPOSTOPERATIVE DAY SUTUREREMOVALWASDONE	**3 OUT OF 30 :** WOUNDDEHISCENCEANDHEALINGBY **SECONDARYINTENTION** **20OUTOF30:**ON7THPOST-OPERATIVEDAYremovalofsutureswas done. **7OUT OF 30:**ON 10TH POSTOPERATIVEDAYremoval ofsutures was done.

Prayercallus	Callosity on the forehead

Table2:Statistical analysis depicting significant pvalue Group A:Minimally invasive Group B:excision biopsy

GroupA		Group B	P value
Painon5thpostoperativeday			
Yes	1	23	0.001
No	29	7	
Walkingdifficultypostoperatively			
Yes	0	7	0.005
No	30	23	
Postopsutureremovalon7thday			
Yes	30	20	0.007
No	0	10	

IV. DISCUSSION:

A corn also known as clavus, is defined as a region or a small patch of skin to undergo well circumscribed hyperkeratosis due to intermittent direct pressure exerted in this small region(1). It is made up of a wedge of compressed hyper keratotic stratum corneum that forms a cone with the base facing towards the skin surface and the apex pointing inward.

It Causes significant amount of pain due to pressure on adjacent nerves.

Corn foot is a very common which is mainly caused by mechanical stresses due to faulty footwear, abnormal mechanics and high levels of activity.

TABLE3:Different Terms for Clavus Depending on Site of Occurrence(2)

Knuckle pads	Hyperkeratosis overthe knuckles
Russell sign	Callosities of the dorsum of the hand over themetacarpophalangeal and interphalangealjoints
Screwdriveroperator'scallosity	Palmarsurfaceofthehand
Spine bumps	Hyperkeratosis overthe spinal column
Hairdresser'shand	Firstfingeron dominant{ rightorleft} hand

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Sucking calluses	Lipand /orhand,orfootofa newborn
Vampdisease	Feet
MuayThai kickboxers	Feet

TYPES OF CORN FOOT(3):

1) HARDCORN FOOT:Commonly seen inplantar aspect
2) SOFTCORN FOOT:Commonly seen in between toes

FIGURE2:TypesofCorn(3)

Treatment of corn foot includes(4)(7):

1. **Soak the feet/hand with corn or callusinluke warm water.**
2. **Pumicestone to file the cornorcallus.**
3. **Apply moisturizing lotion or cream to the area daily :** salicylic acid containing moisturizers are known to causes of tening of hard call uses.
4. **Use padding** the corn is surrounded with do nut-shapedad hesivepads to prevent it from coming into contact while wearing shoes(5).
5. **Wear shoes that are well fitting.**
6. **Excision of corn foot**

The benefits to be expected from the research to the subject or to others:

This will help us assess the effectiveness of the technique as it reduces the volume of the actual corn to be excised and promotes faster healing of the wound with reduced post op follow up especially in patients who are Hepatitis B positive .

V. CONCLUSION:

As corn foot is a very common condition which results mostly in its excision, this study proves that identifying the actual surface area that is to be excised shows better postoperative results and faster wound healing. Minimally invasive technique for corn foot excision is easily adaptable and results derived are much better than normal excision and biopsy and should be the preferred in patients who carry blood borne virus especially Hepatitis B which is highly contagious.

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Ethical Approval: The study was approved by the Institutional Ethics Committee

BIBLIOGRAPHY:

[1]. Callusesand Corns Causesand Treatments."WebMD.Web.13Feb.2012.
[2]. Callosities, corns, and calluses: D.Singh, G.Bentley, and S.G.Trevino: NCB Ihttps:// www.ncbi.nlm.nih.gov/ pmc/articles/PMC2351151/
[3]. "Corns and Calluses: MedlinePlus Medical Encyclopedia." National LibraryofMedicine.Web.13Feb.2012.
[4]. "Corns Symptoms, Causes, Treatment - How Can Corns and Calluses Be Prevented? on Medicine Net."Corns, Symptoms and Causes.Web.13Feb.2012.

[5]. Pavithran K. In: Disorders of keratinization. IADVL Textbook and atlas ofdermatology.2nded. ValiaRG, ValiaAR, editors.Vol.2.Mumbai:Bhalani Publishing House;2003. pp. 799–846.
[6]. Silverskiold JP.Common foot problems: Relieving the pain of bunions, keratoses, corns and calluses.PostgradMed.1991;10:112–4.