

Surgery for Ingrowing Toe Nails With and Without Phenol Cauterization; An Analytic Study at Sialkot District

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ABSTRACT

Objective: To study the outcome of surgical treatment of in growing toe nails of feet with and without phenol cauterization at Islam Medical College, Sialkot.

Study Design: Prospective study.

Place and Duration of Study: This study was conducted at the Department of Dermatology, Islam Medical College, Sialkot from January 2015 to January 2018..

Materials and Methods: All new patients serially treated at that college; fulfilling the inclusion criteria were registered. The patients were classed in two groups: Group I undergoing Surgery only Group II Surgery and Phenol cauterization. The patients with recurrent ingrowing toe nails were also included. Minimum of six months of follow up was must for inclusion in the study. Data was entered and analysis done by SPSS v 22.

Results: Total number of patients in study were 283(100%),having Age 15-47 years, with a mean age of 37+_8 years, out of which 205 patients were males & 78 were females, 58(20.49%) patients were Diabetics. Recurrent IGTN were in 43(15.19%) and peripheral vascular disease was in 7(2.47%), Group I patients were 128(45.22%) and Group II had 155(54.77%) patients. We encountered wound infection in 11(8.59%) and 7(4.51%), recurrence in 8(6.25%) and 3(1.93%), persistent pain in 6 (4.68%) and 5 (3.22%) and disfigurement in 2(1.56%) and 7(4.51%) patients in Group I and Group II respectively.

Conclusion: The surgical treatment in combination with phenol cauterization has very low recurrence rate as compare to surgery alone.

Key Words: Ingrowing toe nail, Cauterization, wedge excision, Phenol

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INTRODUCTION

Ingrowing toenail a painful condition is quite an often presentation in outpatients department of Dermatology. It usually involves big toes of the feet. It is a disease of people between 15 to 45 years. Males are more commonly than females almost three fold. Etiological factors include using tight shoes and improper trimming of toenails.

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Contributing causes are trauma, an imbalance between the nail bed and nail plate, excessive sweating, walking habitus, joint inflammations, obesity, fungal infections of nails, and neoplasms¹.

Ingrown toenails (unguis incarnatus); a controversial term are a common condition of school children and young adults but may be observed at virtually any age. The treatment of these types of nails does not gives good results and morphology of nails and toes remains abnormal².The type of toe nail in which its ingrowing progresses laterally and distally has nail plate curving, its ingrowing acts as a foreign body causing inflammatory response as well as infection there. Precipitating factors are narrow pointed shoes, tight socks, hyperhidrosis, juvenile diabetes mellitus. Surgical options include nail avulsion, wedge resection, total nail bed ablation, and soft tissue resections have high rates of recurrence and morbidity.

In recent years; partial nail excision and Phenol matricectomy have shown good results as far as recurrence is concerned³. Noninvasive treatments are several different methods to achieve this goal, all of which require excellent patient compliance. Taping is the least aggressive method. It separates nail fold's lateral side from disturbing margin of nail. Performed correctly and consistently, it can indeed achieve its goal

in mild cases of ingrown nails. It is important to give proper information to the patients that how to use or apply the tap and how to do care of it. Single layer application is good & tap should be prevented from wetting.

A barrier can be inserted between the nail fold and lateral side of nail's edge, this is called Gutter treatment. A small tube of plastic can be used for this purpose which is placed or stitched with the help of tape or local anesthesia⁴. Surgical treatment has many options like resections, avulsion of the nail or its bed's ablation. In recent years; partial nail excision and Phenol matricectomy have shown good results as far as recurrence is concerned⁵.

Nail avulsion causes significant postoperative morbidity. Recurrence occurs commonly, again resulting in the thickened nail as it has the same width & growth pattern. A small part from the centre is excised usually. This takes the outward pressure of the nail plate away and allows the nail to grow out without piercing into the lateral grooves⁶. Wedge excision uses erbium-YAG lasers, but it doesn't have the promising results. Zadik's procedure applies the technique of ablation of matrix as well as the nail bed. Matrix can also be excised segmentally, more often laterally, which causes good cure⁷. Cautery of the horn, which can be performed electrically or via radiations, is another procedure, but the potential disadvantage is delivery of a lot of heat that may eventually lead to a thermal periostitis⁸.

Laser using carbon dioxide is comparatively a less painful treatment option & its results are long-lasting. Cautery of segments using liquefied phenol has the advantage of lessening the recurrence to only about <1 or 2%, in addition to its simplicity & safety. Phenol also has the role in matricectomy of the nail⁹.

Other Options for chemical matricectomy are sodium hydroxide and trichloroacetic acid (TCA). Trichloroacetic acid (TCA) causes coagulative necrosis of cells through extensive protein denaturation and structural cell death¹⁰.

No date has been published in this subject from Sialkot region of Pakistan; so the objective of this study was evaluate the effectiveness and safety of chemical matricectomy with Phenol in the treatment of ingrown toenails.

MATERIALS AND METHODS

All new patients serially treated Department of Dermatology, Islam Medical College, Sialkot from January 2015 to January 2018 fulfilling the inclusion criteria were registered. The patients were classed in two groups: Group I undergoing Surgery only Group II Surgery and Phenol cauterization. The patients with recurrent ingrowing toe nails were not included. Appropriate systemic antibiotics were administered before the surgical procedure for patients who had infection. The patients were evaluated for the presence of peripheral vascular disease, uncontrolled diabetes

mellitus, bleeding disorders, any history of anaphylactic reactions to chemical solutions.

Digital block using 1% lignocaine was done after aseptic measures. Tourniquet applied proximal to the big toe. The ingrown nail was lifted off the nail bed by starting at the edge. The nail was cut longitudinally 3-4 mm away from the ingrown portion, and extracted. In group II; Phenol was applied with a cotton tipped applicator to the matrix of extracted part and rubbed into the nail bed.

Phenol application was performed two times for two minutes each (a total of 4 min). The site of operation was thereafter flushed with isotonic saline solution in order to neutralize the effect of Phenol. The tourniquet was removed, and antibiotic containing ointment was applied. A gauze bandage was wrapped around the nail. All patients were followed-up at two-day intervals for one week after surgery. Weekly follow-ups were continued until complete healing of the wound. Postoperative complications including pain, drainage and infection were evaluated during postoperative follow-ups. After complete wound healing, the patients were scheduled for follow-up visits every three months. During the follow-up period, recurrence rate and cosmetic results were evaluated in order to determine the effectiveness of surgical treatment. Recurrence was defined as evidence of ingrowth of the nail edge after surgical treatment. Minimum of six months of follow up was must for inclusion in the study. Data was entered and analysis done by SPSS v 22.

RESULTS

Total number of patients in study were 283(100%), having Age 15-47 years, with a mean age of 37+₈ years, out of which 205 patients were males & 78 were females, 58(20.49%) patients were Diabetics.

Table No.1: General Information

Total no of patients in Study	283	100%
Age	15- 47 years	Mean age 37+ 8 years
Male: female	205: 78	2.62 :1
Diabetics	58	20.49%
Recurrent IGTN	43	15.19%
Peripheral vascular disease	7	2.47%
Group I- Surgery	128	45.22%
Group II- Surgery and Phenol	155	54.77%

Recurrent IGTN were in 43(15.19%) and peripheral vascular disease was in 7(2.47%), Group I patients were 128(45.22%) and Group II had 155(54.77%) patients. We encountered wound infection in 11(8.59%) and 7(4.51%), recurrence in 8(6.25%) and 3(1.93%), persistent pain in 6 (4.68%) and 5 (3.22%) and disfigurement in 2(1.56%) and 7(4.51%) patients in Group I and Group II respectively.

Details of patients and group classification is shown in table I. Table 2 represents complications recorded in the

postoperative period and follow up .Postoperative complications including pain, drainage and infection were evaluated during postoperative follow-ups.

Table No.2: Morbidity data

	Group I- Surgery only n=128 (100%)		Group II- Surgery and Phenol n=155 (100%)	
Wound infections	11	8.59%	7	4.51%
Reccurence	8	6.25%	3	1.93%
Persistent Pain	6	4.68%	5	3.22%
Disfigurement	2	1.56%	7	4.51%

DISCUSSION

In our study, wound infections occurred in 11(8.59%) patients in Group I and in 7(4.51%) in Group II, while the study by Bengoa et al¹¹ showed that it was in 9.08% patients. Recurrence occurred in 8(6.25%) patients in Group I and in 3(1.93%) patients in Group II, while it was in 4.23% in the study of Losa et al¹².

Our Data presented that Persistent Pain was a complication in 6(4.68%) in Group I & in 5(3.22%) in Group II, while Tatlican et al¹³ reported it in 5.64% patients. In studies by Kim et al¹⁴, Disfigurement occurred in 3.49% patients, while we reported it in 2(1.56%) in Group I & in 7(4.51%) in Group II.

CONCLUSION

The surgical treatment in combination with phenol cauterization has very low recurrence rate as compare to surgery alone. Other complications like wound infection and disfigurement are also comparably less.

Author's Contribution:

Concept & Design of Study: Muhammad Naeem
 Drafting: Hamda Saqib, Shafiq ur Rehman
 Data Analysis: Kamran Hamid, Sher Afgan, Uzair
 Revisiting Critically: Muhammad Naeem, Hamda Saqib
 Final Approval of version: Muhammad Naeem

Conflict of Interest: The study has no conflict of interest to declare by any author.

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