

ORIGINAL ARTICLE

Clinical Outcome of Wedge Resection Procedure for Ingrown Toe NailMUDASSAR NAZAR¹, MUHAMMAD WASEEM ANWAR², MUHAMMAD ARIF³, MALIK MUHAMMAD YASIN AWAN⁴, GAUHAR NAWAZ KHAN⁵, MUHAMMAD ARSHAD ABBAS⁶, HASSAN RAZA KHOSA⁷¹Associate Professor of Orthopaedics, Shahida Islam Medical College, Lodhran²Assistant Professor General Surgery, CMH Lahore Medical College, Lahore³Associate Professor Orthopaedics, Akhtar Saeed Medical College, Rawalpindi⁴Associate Professor Orthopaedics, Sahara Medical College, Narowal⁵Senior Orthopaedic Consultant, Rajib Tayyip Erdogan Hospital, Muzaffargarh⁶Associate Professor of Surgery, Shahida Islam Medical College, Lodhran⁷Senior Orthopaedic Consultant, Rajib Tayyip Erdogan Hospital, MuzaffargarhCorrespondence to Dr. Muhammad Arshad Abbas, Email: drarshadabbas137@yahoo.com, Cell: 0300-4455969**ABSTRACT****Aim:** To evaluate the results of the wedge resection procedure in the treatment of ingrown toenails**Place and duration of study:** The detailed study was carried out at Shahida Islam Medical College Lodhran and Rajib Tayyip Erdogan Hospital, Muzaffargarh, between September 2020 to August 2022.**Methods:** We conducted a prospective study on 73 patients who underwent wedge resection procedures between Sept 2019 to August 2021. We noted the demographic details like mean age, gender distribution, postoperative complication rate, recurrence rate, and satisfaction with the procedure.**Results:** The mean age(SD) was 29.3 (4.7) years with 33% males and 67% females. We found that 6 min was the average duration of the procedure and only two patients had postoperative complications; 99% were satisfied with the outcome and only 1.37% showed recurrence of the issue.**Conclusion:** We can conclude Wedge Resection Procedure is a safe, effective, and convenient technique in the management of ingrown toe nails.**Keywords:** ingrown toenail, Wedge Resection Procedure (WRP)**INTRODUCTION**

Ingrown toenail, onychogryphosis, or unguis incarnatus, is a common condition with prevalence as high as 2.5 to 5%^{1,2}. It is more common in males and most patients are in their second or third decade at presentation². The lateral fold of the hallux is more commonly involved than the medial one³.

The key reason for development is foreign body invasion; the nail is pressed from the side; the edges go to the cuticle and the foreign body attacks due to the presence of the keratinaceous nail material in the flesh⁴.

The most common presenting symptoms include pain and discomfort in walking, inability to move, swelling around the nail, and infection of the tissue. The common etiological factors of ingrown toenails are careless trimming of nails, wearing tight-fitting shoes, poor hygiene, hyperhidrosis, and trauma^{2,5}. Depending on the stage of the disease; the toenail can cause different levels of discomfort, and disability from walking to complete inability to ambulate⁴.

Patients may present acutely with erythema and seropurulent drainage or ulceration of the nail fold; however chronic infection may lead to hypertrophic granulation of the tissue^{6,7}. Different treatment options are available but unfortunately, the recurrence rate remains high⁸.

Conservative methods include the use of devices inserted to separate the nail plate from the fold⁹. These devices should be placed for some time till the nail grows over it but they can be employed in stage 1 disease only¹⁰. Many times, conservative treatment fails and patients require surgery^{11,12}.

It can be managed surgically by addressing either the nail plate or nail fold, or both. There are ablative and non-ablative procedures; former techniques involve the destruction of the germinal matrix, whereas later modalities protect the germinal matrix. According to Asma and Colleagues¹³ the recurrence risk can be reduced by keeping good foot hygiene and taking care of foot wear.

The study aimed to prospectively evaluate the clinical outcome of the wedge resection procedure in a group of patients with the ingrown toenail.

Received on 11-10-2022

Accepted on 27-01-2023

MATERIAL AND METHODOLOGY

This prospective study was carried out at Shahida Islam Medical College Lodhran and Rajib Tayyip Erdogan Hospital, Muzaffargarh, from September 2020 to August 2022. A total of 73 patients with ingrown toenails were included.

Our Exclusion criteria were;

- Post-traumatic nail deformity
- Patients with dystrophic nail
- Patients with hemophilia
- Patients with onychomycosis
- Patients with immune system disability
- Patients with recurrent problem

All patients underwent Wedge Resection Procedure (WRP) under aseptic measures for ingrown nails. A local anesthetic (2% Xylocaine) was injected at the base of the big toe, with standard infiltration techniques. A finger tourniquet was applied and the nail plate was completely excised. The non-healthy and infective tissue was accurately removed by curettage. A wedge-shaped ellipse of skin and subcutaneous tissue was removed. The nail bed was dressed in betadine gauze and oral antibiotics were administered for 5 days. We combined the complete removal of the nail plate with wedge excision of the nail fold in all of our patients.

Our follow-up protocol was; first follow-up at 2 weeks, second at 6 weeks, third at 3 months, and then every three months to assess the regrowth of the nail and look for potential complications. We recorded patient data and assessed their satisfaction by recurrence rate, complications, and satisfaction with the procedure. All the data were analyzed statistically by SPSS Version 20.

RESULTS

A total of 73 subjects were surgically treated for ingrown toenails. 33% were male and 67% were females with a mean age (SD) of 29.3 (4.7) years (range 22-40 years). Our results showed that the ingrown toenail was bilateral in 24 cases (34%), the right side was involved in 25, and the left in 24 patients.

The average duration of the WRP Procedure was less than 7 minutes. Ingrown nail recurrence occurred in 1 patient (1.37%) and

only two patients had wound infections, which were treated with antibiotics. A total of 71 patients were satisfied with the results.

Fig. 1: Gender

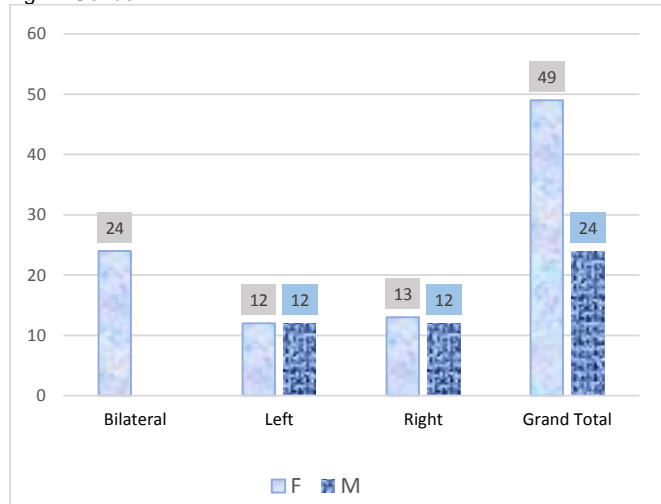
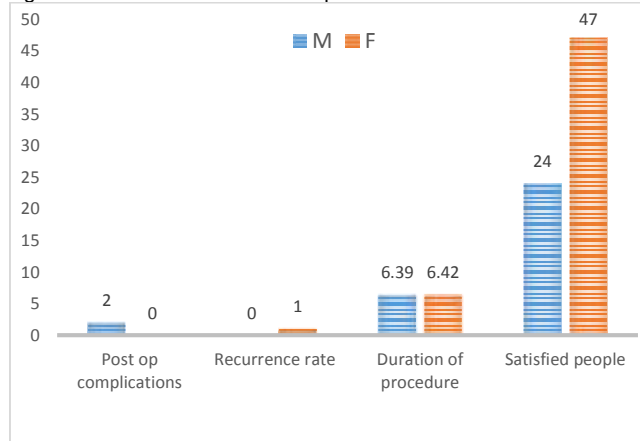


Fig. 2: Procedure duration & complications



DISCUSSION

Nail disorders are of significant importance due to their functional and aesthetic relevance. Common nail disorders are ingrown toenails, fungal nail infections, and traumatic injuries^{14,15}.

A variety of treatments can be employed for ingrown toenails. Treatment options depend on the stage of the disease, prior treatment, history of recurrence, history of bleeding disorders, and pregnancy. Conservative treatment is recommended for mild and moderate lesions and severe injuries are treated by surgical interventions¹⁶.

The age range was 22-40 years in our series of patients; 33% were male and 67% were female with a mean age (SD) of 29.3 (4.7) years. Roeya-e-Rasul and his colleagues found the mean age to be 35.24±8.72 years in their study with 70% males and 30% females.¹⁷ 51.1% of patients were affected on the right toe and 37.8% on the left toe and only 11% had bilateral toe involvement.¹⁷ Though in our series majority of patients were females, other studies showed a higher male-to-female ratio in the 14-25 age group¹⁸.

Surgical treatments are categorized depending on sacrificing or saving germinal matrix¹⁹. A combination of partial nail avulsion and excision of a wedge of the matrix to prevent lateral nail regrowth has been reported in the literature^{18,19}. Radical procedure

such as the Zadic procedure is associated with a high rate of bone infection and delayed wound healing^{19,20}. Nasr and Colleagues studied ages under 18 only and 21% had complications after the wedge resection^{18,21}. Recurrence occurred in only 1 patient while Sargin and colleague²² performed toenail surgery in 143 patients and noted recurrence in 3 toenails.

WRP has been noted to be a successful technique in treating this annoying condition; complications are limited and manageable. Our success rate for the study suggests it is an efficient technique that does not take a long operation time. Sample size can be increased and many centers can be included to see results in a larger population group.

CONCLUSION

We can conclude WRP is a safe, effective, and convenient technique in the management of ingrown toenails.

Conflict of interest: Nil

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