

Ingrowing Toe Nail : Results of Surgical Matricectomy

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Abstract

Ingrowing toenail is a common problem causing lot of discomfort and morbidity. Though a variety of methods have been adopted including conservative treatment, nail excision, partial/complete matricectomy and even amputation of distal part of big toe, but to date no ideal treatment exists. In this study 50 patients with ingrowing toenail were treated by nail excision with surgical segmental matricectomy. The patients were mobile by 24 hrs, were able to perform normal activities by the end of second week and showed complete healing by the end of fourth week. There was no recurrence. The method was found satisfactory for treatment of ingrowing toenail.

Key Words

Ingrowing toenail, surgical matricectomy

Introduction

Ingrowing toenail is a common condition which causes lot of discomfort and morbidity. Though recognized since long, a satisfactory treatment remains elusive. The range of treatment is from conservative management to amputation of distal part of big toe, but the quest for the ideal procedure remains. Reijnen and Goris suggested following criteria for a satisfactory method of treatment of ingrowing toenail (1):

1. The procedure should be simple and cheap.
2. There should be little post-treatment discomfort.
3. Return to normal activities should be quick.
4. The percentage of complications should be low.
5. Recurrence should be minimal.
6. The resulting toe should be cosmetically acceptable.

In this study patients were treated surgically and assessed.

Material and Methods

A total of 50 patients with ingrowing toenail who attended Sub-District Hospital, Bishnah, Jammu, J&K were studied over a 2 year period from October 2001 to October 2003. The operative procedure adopted was similar to that described by Gabriel *et al* (2). Procedure is carried out under local anesthesia by giving ring block using 2% lignocaine. Nail was removed by separating it from nail-bed and pulling it out. On the affected side a strip of tissue was excised which included lateral 1/4th of the germinal matrix, the overhanging soft tissue and part of nail-bed. The germinal matrix on the sides extends proximally and it is important to include the entire germinal matrix in excised tissue or recurrence in the form of

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spicula results. A small probe helps to gauge the extent of germinal matrix. One must go upto midway between lunular line and distal interphalangeal joint with readiness to go more proximally. On the deeper aspect, the terminal phalanx should be bared of soft tissue. The wound was dressed by antibiotic soaked gauze and a pressure dressing was applied. Patient was advised to take rest for first 24 hrs with the foot elevated and then allowed to gradually resume his activities.

Patients who had infected ingrown toenails were initially treated by antibiotics and analgesics, and inflammation was allowed to subside before they were taken up for surgery. Conservative methods were not employed, mainly because the patients asked for surgery and were reluctant for conservative methods as most of them were suffering since long and some even having multiple episodes of infection. In all patients it was the big toe that was affected. Patients were given perioperative antibiotics. Bilateral cases were treated one side at a time. No patient had been operated previously.

Results

The age incidence is shown in Table 1. Patients in second decade of life were most commonly affected (50%) followed by patients in third decade of life (28%). The youngest patient was 12 yrs old while the oldest was 65 yrs old.

Incidence in males was more (58%) as compared to females. In all patients it was the big toe that was affected. Two patients had bilateral ingrowing toenail. After initial rest of 24 hrs, all the patients were able to move around. By the end of second week, they were able to attend to their normal work. Healing was complete by 4 weeks in all the patients. Regrowth of nail took longer time. Only one patient who did not take antibiotics had post-operative infection, which rapidly subsided after antibiotic therapy. No recurrences were observed.

Table 1: Age incidence of patients having ingrowing toenail.

Age (Years)	Male	Female	Total
10-19	14	11	25
20-29	8	6	14
30-39	4	2	6
40-49	1	1	2
50-60	1	1	2
>60	1	---	1
TOTAL	29	21	50

Discussion

Albucasim in eleventh century treated ingrown toenails by excision and cautery of granulation tissue (3). Ambrose Pare in sixteenth century practiced surgical excision of granulation tissue. Fabricius in seventeenth century excised and avulsed the ingrowing margin. Heister in eighteenth century practiced elevation of the corner of ingrowing toenail with cottonwool splint. Many methods are in vogue today, which include conservative treatment, nail avulsion, wedge resection of nail-bed and matricectomy (4). Matricectomy may be complete or partial (segmental) and may be done surgically, chemically (by phenol) or by other methods. A classification system has been developed in an attempt to standardize the description of disease and to set guidelines for the type of treatment to be employed (5). However, no final consensus has been arrived at.

In this study most of the patients were in second decade of life, which is similar to the incidence reported in literature (1, 6-9). A slightly higher incidence in men is observed in our study and has been reported in literature also.

No recurrence was observed in present study. However, a longer follow-up in more number of patients is required. Murray and Bedi have reported a high recurrence rate of 16-64% for various surgical methods employed to treat the ingrowing toenail (9). However, Mogensen reported recurrences in only 6 (9%) out of 70 patients (10). Gabriel et al (2) had a recurrence rate of 1.7% (7 out of 528 patients). Recurrence occurred in

patients who were treated in early part of their study and later patients did not have any recurrence. The advantage of partial matricectomy over complete matricectomy is that nail regrows from the rest of matrix, thus giving a better cosmetic result.

Other methods of germinal matrix ablation have been used. Chemical matricectomy using phenol has been used and excellent results claimed (8,11). However, meticulous technique is required and prolonged post-operative wound drainage and delayed healing can occur. Superiority of either method-surgical matricectomy or chemical matricectomy - has not been established. Other methods used for matricectomy include carbon dioxide laser, liquid nitrogen cryotherapy, radiowaves, negative galvanic current and electrodesiccation (6,12). The data on these methods is inadequate to make any firm recommendations.

Conclusion

Surgical partial matricectomy remains a good method of treating ingrowing toenail. As long as proper attention is given to completely remove the targeted portion of germinal matrix, it gives acceptable results in terms of low complication and recurrence rates, cosmetically acceptable toe and patient comfort.

References

1. Reijnen JAM and Goris RJA. Conservative treatment of ingrowing toenails. *Br J Surg* 1989; 76 : 955-57.
2. Gabriel SS, Dalto V, Stevenson DL The ingrowing toenail: a modified segmental excision operation. *Br J Surg* 1979; 66 : 285-86.
3. Lloyd-Davies RW and Brill GC. The aetiology and outpatient management of ingrowing toenails. *Br J Surg* 1963; 50 : 592-97.
4. DeLauro TM. Onychocryptosis. *Clin Pediatr Med Surg* 1995; 12: 201-13.
5. Mozena JD. The Mozena classification system and treatment algorithm for ingrown hallux nails. *J Am Pediatr Med Assoc* 2002; 92: 131-35.
6. Ikard RW. Onychocryptosis. *J Am Coll Surg* 1998; 187 : 96-102.
7. Heifetz CJ. Ingrown toenail. A clinical study. *Am J Surg* 1937; 38: 298-315.
8. Seher Bostanci, Palin Ekmeckci, Erbak Gurgey. Chemical matricectomy with phenol for the treatment of ingrowing toenail: A review of literature and follow-up of 172 patients. *Acta Derm Venereol* 2001; 81: 181-83.
9. Murray WR and Bedi BS. The surgical management of ingrowing toenail. *Br J Surg* 1975; 62 : 409-12.
10. Mogensen P. Ingrowing toenail. *Acta Orthop Scandinav* 1971; 42 : 94-101.
11. Lathrop RG. Ingrowing toenails: causes and treatment. *Cutis* 1977; 20 : 119-22.
12. Yang-Chin Lin, Hsin-Yi Su A. surgical approach to ingrown nail: Partial matricectomy using CO₂. *Dermatol Surg* 2002; 28: 578-80.