Results of Partial Matrixectomy for Ingrown Toenail

Tırnak Batması Tedavisinde Parsiyel Matrisektomi Sonuçlarımız

Results for Ingrown Toenail

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Özet

Tırnak batması yaşam konforunu olumsuz etkileyen sık görülen bir durumdur. Tırnak batması tedavisi için medikal tedavilere ek olarak çeşitli cerrahi yöntemler tanımlanmıştır. Bu çalışmada medikal tedaviden fayda görmeyen, tırnak batması şikayeti olan olgularda uygulanan, kısmi tırnak çıkarılması ve perkütan matrisektomi sonuçları değerlendirildi. Tırnak batması nedeniyle cerrahi tedavi gören 21 hasta geriye dönük olarak incelendi. Hastaların yaşı, cinsiyeti, şikayet süresi, nüks gelişip gelişmediği, cerrahi süresi ve işe geri dönüş zamanı incelendi. Parsiyel eksizyon ve perkütan matrisektomi uygulamsının hızlı ve kolay olduğunu işe geri dönüş süresinin daha erken olduğunu düşünmekteyiz.

Anahtar Kelimeler

Tırnak Batması; Kısmi Matrisektomi; Tekrarlama

Abstract

An ingrown toenail is a frequently seen condition which affects life comfort negatively. Several surgical techniques have been defined in addition to medical methods for the treatment of ingrown toenail. This study evaluated the results of partial removal and percutaneous matricectomy in cases with a complaint of ingrown toenail that could not benefit from medical treatment. 21 patients who received surgical treatment for ingrown toenail were examined retrospectively. The patients' age, sex, duration of complaint, length of time before going back to work, duration of recurrence and length of surgery were studied. It was found that partial removal and percutaneous matrix excision were easier, quicker and they allowed a quick healing period.

Keywords

Ingrown Toenail; Partial Matricectomy; Recurrence

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Introduction

Ingrown toenail is a clinical condition that progresses with pain, redness, swelling, granulation tissue and purulent drainage due to the growth of an edge of the toenail into the skin of the toe [1]. Although it is considered to be a simple discomfort, the fact that it is a frequent condition which causes workforce loss and affects daily life negatively increases its significance. The reasons for ingrown toenail are mistrimming of the nail, wearing tight shoes, standing for long periods of time and genetic predisposition [2]. Because of these risk factors, the nail grows into the skin of the toe and edema and redness appear on the soft tissue. This in turn causes disruption of the integrity of the skin and infection. The infection that is formed drains on the one hand and tries to limit with granulation tissue on the other hand. Thus, a vicious circle forms. While medical treatment is preferred for mild cases, surgical treatments are recommended for advanced cases. Although there are many treatment methods, new treatments are being tried every day because of loss of workforce and frequency of recurrence. This study examines the methods of partial nail removal and percutaneous matricectomy for ingrown toenail.

Material and Method

21 patients who were treated with nail bed resection for an ingrown big toenail between February 2010 and March 2013 were included in the study. Stage II and III patients who applied with a complaint of ingrown toenail and who had pain, chronic purulent drainage and granulation tissue were treated with partial nail and matrix resection. Surgery was performed under sterile conditions. The foot was prepared up to the level of ankle. Surgery was performed to the ingrown nail from the surface to the skin gradually with a 2 cc. prilocaine insulin needle from 5 mm. proximal dorsal of the nail (Figure 1). 1-2 minutes later, when the pain was gone and when the patient did not respond to painful stimulant, the procedure started. Tourniquet was not used. Removal of ¼ of the side with the complaint was aimed (Figure 2). First, the dense granulation tissue was resected with curette until the normal tissue was seen. The nail's dorsal and lateral were freed from the soft tissue it was connected to with the help of clamp. Similarly, the nail was separated from the soft tissue underneath and ¼ of it was removed by turning it upside down. The reversed part was cut by bistoury or surgical scissors. Under the cut nail, the matrix was cut to the bone starting from 0.5 cm. proximal with bistoury. The nail bed on the medial was percutaneous curetted with a mini curette. The nail was dressed with Furacin pomade and compression bandage and it was closed. After the procedure, the patient was recommended to have 24 hours of rest and elevation. The patients were discharged the same day with a prescription of analgesic anti-inflammatory and oral antibiotics. The patients were controlled three days later and they were permitted to start work. While four of our patients could get back to work at the end of the tenth day because their work was hard and because their pain and swelling continued, the others could get back to work at the end of the third day following the surgery.

Results

12 of the patients were male while 9 of them were female and the average age of the patients was 27 (distribution; 16-35). Right big toenail of the 14 of the patients was ingrown while left big toenail of the 7 of the patients was ingrown. According to the classification of Heifetz, 5 (24%) of the patients were stage II and 16 (76%) of the patients were stage III. Three of the patients had been treated before with other techniques and they were recurrent cases. Average follow-up period was found to be 24 months (distribution; 6-32). 3 (14%) of our patients were found to develop recurrence at the end of the second, fourth and sixth months. One of these patients had had recurrence before and two of them had been treated for the first time. Two of these patients had nail bed resection again. The other patient did not accept surgical procedure. One of the patients had epilepsy while none of the other patients had another chronic illness. At the end of the first month following the surgery, none of the patients had a healing problem. The infection before the surgery disappeared, however mild redness and swelling disappeared in four patients at the end of two months. In their last controls, the patients were asked two evaluate their pain, the ability to wear shoes and cosmetic appearance out of 10 for before and after surgery. Less than 5 was considered to be bad while more than 7 was considered to be very good. The results showed that 18 of the patients thought their condition was very good while 3 of the patients thought their condition was bad.

Discussion

An ingrown toenail is a frequently seen condition which affects daily life negatively. Although the reason for ingrown toenail is not known definitely, main risk factors are mistrimming of the nail, wearing tight and high heeled shoes, foot infections and genetic predisposition [2]. It is more frequent in young males and in people who work standing all the time [3,4]. The average age of our cases was 27 years (distribution; 16-35) and 15 of them were in their third decade. 12 of them were male while 9 of them were female and 14 of the lesions were in the right big toe while 7 of the lesions were in the left big toe. Age, sex and side involvements were parallel with the literature [3,4].

Aydın et al. grouped ingrown toenail in three stages [5]. There is inflammation and pain in stage I and infection is added to inflammation and pain in stage II. Stage III is chronic infection or inflammation and thickening of the soft tissue with granulation tissue. Conservative treatment is recommended for stage I while surgical treatment is recommended for stage III. Treatment for stage II changes depending on the physician. We prefer conservative treatment for stage I and leave the preference to patient for stage II. For stage III, we remove the ingrown nail with its matrix. 5 (24%) of the patients in this study were stage II while 16 (76%) of the patients were stage III.

A great number of surgical techniques and treatments have been applied and different results have been reported for ingrown toenails. Reijnen and Goris defined the characteristics of surgical method as follows [4]. The technique should be simple and slightly traumatic, the return to work should be quick, there should be little risk of recurrence, there should be few surgical complications and the method should be cosmetically acceptable [4]. In general, surgical techniques can be analyzed in three groups as total or partial nail removal; partial matrix removal

and nail removal; and laser, electrocautery, sodium hydroxide and phenol application of the matrix [6]. In all procedures, local anesthesia is done by applying digital nerve block at the level of proximal phalanx. This method performs both digital nerve blocks in medial and lateral, uses approximately 5-10 ml. Local anaesthetic and 10 minutes pass before its effect starts [7]. In our study, we applied anesthesia only to the 5 mm. proximal of the ingrown nail. Thus, we had the advantage of performing the procedure with only one injection, starting the anaesthetic effect in 1-2 minutes and using less anaesthetic.

The most frequent reason of recurrence in ingrown toenail is not being able to remove the nail matrix or growth plaque completely. The most critical point of the surgical procedure is the complete removal of germinal matrix and growth plaque. Previously recorded studies generally used tourniquet and aimed removal of granulation tissue, reaching the skin from dorsal until nail matrix and growth plaque were exposed and a complete removal [8]. However, this extends the length of time for surgery, increases the risk of bleeding and infection, extends the period of healing and the length of time required for going back to work and some complications may arise due to forgotten tourniquets [8]. In this study, the nail was loosened from dorsal and plantar surface without cutting the skin and after the ingrown part was exposed; it was cut by bistoury to the bone. The nail, matrix and growth plaque was curetted to the bone by mini curette. Especially during the curettage, the nail was incised radically to the bone. During this procedure, there was little bleeding because the skin was not cut, no tourniquet was required and the wound healed faster. The main advantages were less morbidity, shorter length of time for going back to work, little risk of infection and bleeding and no tourniquet complications. In this study, only 3 (14%) recurrence was seen out of 21 patients, one of whom was previously treated in another center and two of whom were treated by us for the first time. Local anesthesia method, partial nail removal and percutaneous matricectomy used in ingrown toenail are a good treatment choice because they can be applied more easily and because they have a quicker period of recovery. However, studies with more cases are required.

Competing interests

The authors declare that they have no competing interests.

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