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Partial removal of nail matrix in the treatment of ingrowing toe nail

Tırnak batması tedavisinde kısmi matriks eksizyonu

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Amaç: Tırnak batması toplumda sık görülmektedir. Bu çalışmada ayak başparmağında tırnak batması nedeniyle uygulanan cerrahi tedavinin sonuçları değerlendirildi.

Çalışma planı: Tırnak batması nedeniyle 62 hastaya (31 erkek, 31 kadın; ort. yaş 38; dağılım 11-72) Winograd prosedürüne uygun olarak kısmi matriks eksizyonu uygulandı. Hastaların temel şikayetleri ayak başparmağında ağrı, kötü kokulu akıntı, tırnakta şekil bozukluğu ve yürüme güçlüğü idi. Heifetz'in tırnak batması evrelendirmesine göre 18 hasta evre I, 23 hasta evre II, 21 hasta evre III olarak değerlendirildi. Kırk dört hastada enfeksiyon zemininde aktif akıntı vardı. Enfekte olgularda cerrahi için, enflamasyon bulguları antibiyotik tedavisiyle yatışıncaya kadar beklendi. Tırnakta ileri derecede şekil bozukluğu bulunan bir hastada subungual egzositoz nedeniyle egzositoz eksizyonu yapıldı. Hastaların işe dönüş zamanları, nüks gelişimine kadar geçen zaman ve hasta memnuniyeti değerlendirildi. Ortalama takip süresi 26 ay (dağılım 24-42 ay) idi.

Sonuçlar: Dört hastada (%6.5) nüks görüldü. Ortalama nüks gelişim süresi 4.2 aydı (dağılım 3-7 ay). Diğer hastalar ortalama 12 günde (dağılım 10-16 gün) günlük aktivitelerine geri döndü. İşe dönüş süresi ortalama 5 gün (dağılım 3-16 gün) bulundu. Altmış hasta yapılan müdahaleden memnundu. Nüks gelişen iki hasta cerrahiden memnun kalmadığını bildirdi. Hastaların hiçbirinde derin doku enfeksiyonu veya nörovasküler komplikasyon gelişmedi.

Çıkarımlar: Tırnak batması tedavisinde kısmi matriks eksizyonu nüks oranı düşük ve hasta memnuniyeti açısından uygun bir yöntemdir.

Anahtar sözcükler: Halluks/patoloji; tırnak hastalığı; tırnak batması/cerrahi.

Objectives: Ingrowing toe nail is a frequent disorder of the foot. In this study, we evaluated the results of surgical treatment of ingrowing toe nail.

Methods: Sixty-two patients (31 males, 31 females; mean age 38 years; range 11 to 72 years) with ingrowing toe nail underwent partial removal of the nail matrix according to the Winograd technique. The presenting complaints were pain, foul-smelling drainage, deformity, and difficulty in walking. According to the Heifetz's staging system, 18 patients had stage I, 23 patients had stage II, and 21 patients had stage III disease. Forty-four patients had active drainage due to an infectious process. The infected cases were operated on after improvement of inflammation by antibiotic treatment. One patient underwent excision of subungual exocytosis causing severe deformity of the toe. Time to return to work, time to recurrence, and patient satisfaction were evaluated. The mean follow-up period was 26 months (range 24 to 42 months).

Results: Recurrence was seen in four patients (6.5%) within a mean of 4.2 months (range 3 to 7 months). The remaining patients returned to normal daily activities after a mean of 12 days (range 10 to 16 days). The mean time to work was five days (range 3 to 16 days). All but two patients who developed recurrences expressed satisfaction with surgery. None of the patients had deep infection or neurovascular complications.

Conclusion: Partial removal of the nail matrix is associated with a very low recurrence rate and a higher rate of patient satisfaction.

Key words: Hallux/pathology; nail diseases; nails, ingrown/surgery.

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Ingrowing toe nail is a result of ingrowing of the nail to the nail matrix. [1] The incidence becomes higher in recent years because of wearing tight shoes. The main complaints of the patients are pain, drainage with smell and nail disorder which is a result of soft tissue hypertrohpy due to nail ingrow.

The normal distance between the nail and the nail groove is 1 mm. The nail Groove is covered by a thin layer of epithelium. This area prevents the irritation of the nail. Wearing tight shoe and socks increases the pressure at the nail groove and the matrix. As a result of this, an hyperplasic reaction occur at the nail groove and the surrounding soft tissues. Continuous irritation results with infection of these tissues. In this study, the clinical results of patiets with ingrowing toe nail treated with parsial matrix excision is presented.

Patients and methods

Between October 2000 and October 2002, 62 patients with infection as a result of ingrowing toe nail (31 male,31 female; Mean Age:38; range:11-72) were operated. The surgical invervention was performed by the first and the second researchers. The patients with nail fungal infection were consulted with dermatology department and excluded from the study. No preoperative radiograph were obtained. The main complaint of the patients were pain and drainage on the nail. The Heifetz stageing was used in the evaluation.2 Stage I, indicates swelling and erithema at the nail fold, Stage II indicates acute and active infection , Stage III indicates chronic inflamation with granulation tissue neighbouring the nail folder. In the first evaluation 18 patients were Stage I, 23 patients were Stage II, 21 patients were Stage III. Active drainage was detected in fourty four patients. The patients with active infection was treated with an antibiotic regimen (Sodium Fusidic Acid 1500 mg/day). The patients without active drainage were undergone surgery. (Figure 1) In one patient egzositozis was found and exositosis excision was performed during the surgery. (Figure 2).

Surgical technique

All surgical interventions were performed under digital anasthaesia at the local surgery room at the clinic. A finger tourniquet was applied with a clamp on it. Winograd procedure was performed in all patients. 3 A vertical incision was performed along the border of the nail with No:15 blade. The incision was lenghtened 4-5 mm proximally . Nail matrix and all hypertrophic tissues excised . The cortex over the distal phalanx cleaned up by a curette. (Figure 1 c) Compression bandage was applied on the toe. NSAID, elevation and antibiotics were given after surgery. The patients were back to work in two weeks time. The patients were evaluated in 6 months period. The mean follow-up period was 26 months(Range: 24-42 months).

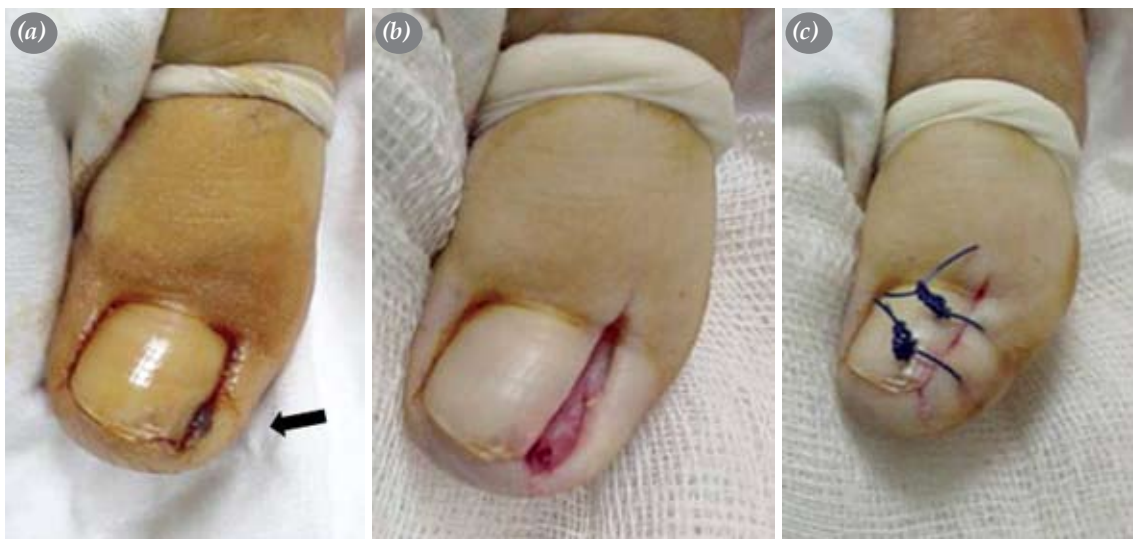

Figure 1. A case with ingrowing toe nail **(a)** Preoperative after tourniquet **(b)** After the excision of the nail matrix **(c)** Early postoperative view.

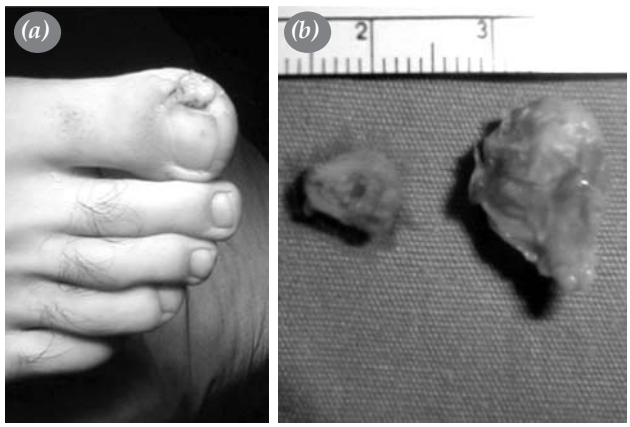

Figure 2.(a) Subungual exositosis **(b)** Excision of exositosis

Results

No major complications were detected in the patient series. Recurren ingrowing toe nail was found in 4 cases. (%6.5) The mean time to recurrance is 4.2 months. (Range: 3-7 months) The mean duration for back-to work was 12 days (Range:10-16 days) Sixty patients were happy with the treatment.

Discussion

Toe nail ingrowing is a common disorder resulting from a bony malformation at the distal phalanx or fungal infection of the nail. 3 If used to designate a hook of nail caused by improper nail care growing into an overlapping nail fold that has obliterated the lateral nail Groove, the term is acceptable. The condition is most rare in unshoed populations, and the most likely explanation is the absence of extrinsic pressure.

In the skeletally mature foot the germinal matrix is 2-3 mm and deep to the proximal nail fold. The germinal matrix sends projections into the adjacent soft tissue that make complete nail ablation difficult. It is the germinal matrix that contributes to longitudinal growth of the nail plate. [2,4]

The surgical procedure can easily be done under local anasthesia. The finger tourniquet should be marked with a surgical instrument to prevent forgetting the tourniquet after the procedure.5 A long acting local anasthetic agent should be used to overcome the postoperative pain. The surgical technique was first defined by Winograd in 1936. 2 The recurrence rate is even higher after partial plate removal. It is between %1.7- %27. [1,2,6-10] The surgery is technically easy and standized procedure.

Needing no special tool and special chemical is the main advantage of the technique. In 1945 chemical matrisectomy is popularized. The recurrence rate is lower in chemical matrisectomy. [9,11] There are some cases of uncontrolled burns with phenol like agents in the literature. [11,12,13,14] CO_2 laser technique is another method for treatment. [15]

The surgical technique of partial removal of the matrix has short learning period. Even in untrained hands the recurrence rate is low. We had good clinical results in 62 patient series.

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