New techniques

Correction of transverse overcurvature of the nail using autologous dermal graft

Correção de hipercurvatura transversa da unha utilizando enxerto de derme autóloga

ABSTRACT

Introduction: Transverse overcurvature is a common inaesthetic and painful deformity of the nail plate. There are several conservative and surgical techniques for treating this condition. We describe a simple and cost effective technique using autologous dermal grafts.

Keywords: nail diseases; nails; nails, malformed; nails, ingrown; ambulatory surgical procedures.

INTRODUCTION

Transverse over-curvature of the nail can be classified into 3 types: pincer nail, tile nail and folded nail. Although the etiology is uncertain, it has been attributed to conditions such as tumors, psoriasis, exostosis and others. Although the big toe is frequently affected, this deformity can occur in other digits. The curvature increases distally, pinching the soft tissue beneath the nail plate, causing severe pain and sometimes secondary infection. Treatment is recommended if the patient has pain, inflammation, difficulty wearing shoes or cosmetic complaints. This condition usually affects a patient’s daily activities and quality of life.

Several surgical treatments have been reported, but until now there has not been a universally accepted technique. Zook suggested placing dermal grafts under the lateral nail beds between the paronychial fold and the phalanx to flatten the nail bed. Removal of hypertrophy of lateral and distal nail folds using Howard-Dubois’s technique or U shape techniques are described as a surgical correction, especially when an osteophyte of the distal phalanx is removed and the nail bed must be flattened. This article describes a procedure that combines both of these techniques to flatten and widen the nail bed and correct...
the dense adherence of the nail bed to the periosteum, in order to prevent a reattachment of the nail bed to the distal phalanx and preserve the nail matrix.

**METHODS**

The nail plate is removed after a distal block anesthesia and the placement of a tourniquet (Figures 1 and 2). An elliptical wedge of soft tissue, approximately 5 mm wide, is excised within the distal lateral wall and removed down to the bone, as in Howard-Dubois's technique. The dermal graft is performed after the epidermis and fat tissues have been removed using scissors. The graft is then divided into two fragments of about 15 mm each (Figure 3). The lateral paronychial attachments to the bone are longitudinally freed with a blunt spatula, creating a tunnel from the open wound to the matrix on both sides (Figure 4). The dermal grafts are placed inside these tunnels to flatten the nail bed, as in Zook's technique. Finally the incision is closed with mononylon 4-0 (Figure 5). After the procedure, analgesics are prescribed and the suture stitches are removed after 7 to 14 days.

**RESULTS**

Immediately after the procedure it is possible to note the flattened nail bed due to the elevation of the nail matrix in the places where the grafts were placed. The pain is light to moderate in the first days, being more intense when there is necessity of osseous rectification. The use of closed shoes is allowed after approximately 4 weeks, with clear improvement of the pain when walking, as compared to the period before the procedure. The new nail grows with a flattened plate and an elongated bed, with excellent esthetical and functional results. (Figures 6 and 7).
DISCUSSION/CONCLUSION

The transverse over-curvature of the nail is a nail apparatus alteration considerable prevalent in the population, leading to esthetical and functional problems. A number of correction techniques are described in the literature. The present method is aimed at combining two diverse techniques by excising the hallux’s hypertrophy (according to the Howard-Dubois technique), using that material as a dermal graft (according to the Zook’s technique), rather than discarding it. With the synergy generated from the combined techniques, this procedure takes less time, less anesthesia and avoids an unattractive scar in the donor area for the dermal graft.

REFERENCES