

Ingrown Toenail (Onychocryptosis)

Background

1. Definition

- Ingrown toenail occurs when lateral nail plate pierces the lateral nail fold and enters dermis

Risk factors

1. Narrow/Tight tip shoes (pressure on nail plate causes subungual plate callus)
2. Trauma
3. Improper nail trimming (excessive trimming of lateral nail plate)
4. Hyperhidrosis (softens nail plate)
5. Pachyonychia congenital (thickened yellow scaling of nails)
6. Psoriasis
7. Diabetes Mellitus
8. Onychomycosis
9. Paronychia

Relative Contraindications

1. Peripheral vascular disease (including Diabetes)
2. Bleeding disorders
3. Active toenail infections

Surgical Treatment of Ingrown Toenail

1. If left untreated, cellulitis, ulceration, and necrosis could result in amputation, especially in patients with diabetes or arterial insufficiency
2. In those presenting without signs of infection, removal of just the offending spicule will often result in complete resolution of the problem
 - Even more conservative approach which often proves sufficient is avoidance of pressure on the nail combined with daily foot soaks and placement of a small bolster (small piece of cotton or lamb's wool) to pad between the impinging nail and skin
3. When present, granulation or infection is an indication for partial nail plate removal

Anatomy

1. Nail unit consists of:
 - Proximal nail fold
 - Nail matrix
 - Nail bed
 - Hyponychium
2. Most problems occur at lateral or medial nail groove at level of nail bed or hyponychium

Procedure

1. Place digital block and prep in sterile fashion
2. Use sterile rubber band with hemostat around the toe as a tourniquet

3. Nail is cut from tip to base carefully extending under the cuticle as far as possible
 - Easily accomplished using English Anvil or narrow tipped scissors
 - Nail splitter can be used to undermine the nail from nail bed
 - Can also accomplished by gently advancing hemostat under the cut portion of nail, carefully sliding side to side to release the nail from underlying tissue
4. Once released, the offending nail portion is firmly clamped with hemostat and with a rocking motion the piece is removed
 - Bleeding is generally minimal and is controlled with direct pressure for a short period
5. Application of phenol to matrix will prevent re-growth (see below), alternatively can use electrosurgical matricectomy with Ellman unit
 - Properly treated nail bed appears whitish after thermal ablation
6. Excess granulation tissue developed over lateral cuticle can be removed by electrocautery and wiping the destroyed tissue with gauze piece
7. Wound is dressed with non-adherent gauze or antibiotic ointment and a sterile dressing which is kept dry until a re-check at 48 hr
 - Low dose hydrocodone may be required for pain control during the first few days post-procedure

Use of phenol in ingrown toenail excision

1. Basic rule

- If bathing the toe and using spacious shoes does not result in healing, the best treatment is cutting and simple avulsion of nail edge combined with phenolization
 - More effective and less traumatic than surgical excision

Techniques

1. After digital nerve block, cut 3 mm slice from lateral side of nail with scissors
 - Continue incision through proximal nail margin
 - Detach lateral side from nailbed and extract it
2. Dry the resulting area and insert thin cotton wool bud dipped in 80% phenol into it
 - Replace a new bud 2-3 times
3. Take care to prevent phenol from spreading onto surrounding normal skin by applying petroleum jelly
4. Clean area and remove excessive phenol with cotton wool bud dipped in saline
5. Cover toe with dressings
6. Acute infection around nail edge is not a contraindication for the procedure
7. Addition of phenol to excision of ingrown toenail
 - Significantly reduce incidence of recurrence
 - Equivalent patient satisfaction (93%) and cosmetic result
 - Ablation of choice
 - High success rate, low morbidity and simplicity
 - Low postoperative complications such as infection
 - Average mean time to return to work: 1 week
 - Average mean procedure time for single wedge resection with phenolization: 7.3 min

References

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