

pressure. The patient was restricted for 14 days and normal activity was allowed after suture removal following this period. The patient healed without any problem and her nail problem was treated successfully. The cosmetic appearance of her first toes was acceptable 8 months after operation (Figure 3). There was no regrowth of nail plates bilaterally. Effective and stable soft tissue coverage of dorsal surface of distal phalanx bone was provided by the thick plantar skin transferred dorsally by using the triple advancement flap method.



Figure 1. Preoperative picture of severe bilateral nail plate dystrophy involving great toe (A) left, (B) right.

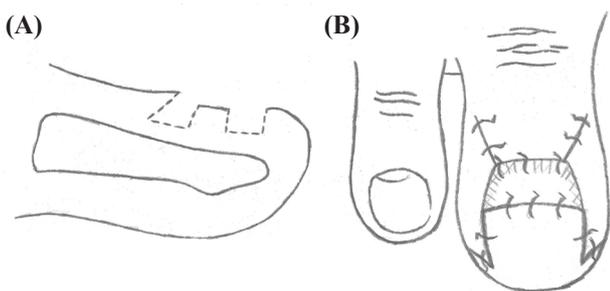


Figure 2. (A) Appearance after proximal and distal nail bed resections. (B) Appearance after reconstruction with triple volar flap.



Figure 3. Late postoperative picture of the right and left great toes

Discussion

Total permanent nail ablation for the treatment of severe nail dystrophies involving the nail plate can be performed by total surgical nail matrix excision and total ablation of nail matrix with electrocautery, chemicals or laser^[1-3].

Clinical results of phenol cauterization of nail matrix compares favorably with surgical ablation^[1,2]. Phenol cauterization results in fewer nail spicule formation and less postoperative pain^[1,2]. However, addition of bilateral nail matrix horn ablation by using electrocautery will decrease the risk of postoperative spicule formation greatly following surgical total nail matrix excision. Significant cardiotoxicity of phenol due to systemic absorption from dermal application site is a problem especially when patients have cardiac disorders^[4]. Ten percent sodium hydroxide can also be used to perform total nail matrix destruction to avoid systemic toxic effects of phenol use^[3]. Chemonecrosis of the surrounding tissues is a potential problem with both phenol and sodium hydroxide nail matrix ablation. Thus, chemical cauterization of the whole nail matrix with significant damage to surrounding soft tissues causes damage to thin soft tissue layer which covers the dorsal surface of the distal phalanx bone. Therefore, scarred nail bed area following recovery from chemical injury will lead to less stable soft tissue coverage for underlying bone. Total chemical nail matrix ablation method also leaves nail bed area unprotected because protective function of nail plate is lost.

Total nail matrix ablation by using electrocautery and lasers also leave dorsal part of distal great toe unprotected because nail plate will never grow again in the absence of nail matrix^[2,3].

Surgical resection of nail matrix for total permanent nail ablation may be used for the treatment of difficult nail plate deformities^[5]. We used modification of the Zadic technique which is an effective method for total surgical matricectomy^[3]. Effective execution of surgical total nail matrix excision combined with electrocautery ablation of nail matrix horns bilaterally results in total nail ablation and postoperative nail spike formation is unlikely. Since protective function of nail plate is lost following total nail matrix resection the nail bed area and underlying distal phalanx bone is open to injury. This problem was overcome by replacing thin and fragile nail bed tissue with thick and durable plantar skin through the use of triple flap technique in our case. Triple flap technique is an extension of lateral foldplasty technique that was described previously and used to treat ingrown toe nails^[6]. Distal nail bed defect associated with resection of subungual exostosis and overlying callus was reconstructed successfully by using a modification of this triple flap technique^[7]. Pincer nail deformity can be successfully treated by a similar modification of this triple flap technique^[8].

Radical nail matrix resection or the Syme procedure involves the radical en bloc resection of the entire nail complex^[3]. The plantar faciocutaneous flap formed from amputation of the distal half of the terminal phalanx bone is sutured dorsally over the soft tissue defect created

