

MEDIAL SKIN INCISIONS FOR HALLUX VALGUS REPAIR

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The ideal skin incision should provide excellent surgical exposure with a minimum of trauma to the soft tissues. Wound dehiscence, hypertrophic scarring, infection, edema, wound contracture, and poor visualization of the surgical field are potential complications of poorly-placed skin incisions. A well-placed incision requires minimal retraction and manipulation of the skin, subcutaneous, and deep tissues while surgery is being performed. This results in less direct and indirect (post-traumatic edema) damage to the neurovascular structures and lymphatics.

The location and appearance of the scar are factors which also need to be considered in successful surgery. A heavy scar (hypertrophic or keloid) is not only unsightly, but may become a source of irritation from shoe pressure. The appearance of the scar is influenced partly by atraumatic technique, but mostly by location. The skin has naturally-occurring lines of tension determined by the underlying osseous and muscular contours. These lines of tension are referred to as relaxed skin tension lines (RSTL). An incision which is placed perpendicular to the RSTL will tend to widen as the underlying tension distracts the incision. The RSTL in the forefoot, specifically the first metatarsophalangeal joint, run transversely over the dorsum of the foot.

All incisions which penetrate through the dermis will heal with a scar. Scars are composed of dense inelastic connective tissues which result in varying degrees of wound contracture. A skin incision placed perpendicular to a joint's axis can possibly lead to restriction of joint motion.

Many incisional approaches have been described for hallux valgus surgery. Some of the more common incisions include: a medial curvilinear incision (avoids shoe pressure over the medial eminence), a dorsal or dorso-medial incision (most common approach), a two incision approach (gives easy access into the first interspace), and a pure medial approach.

Medial incisions have fallen out of popular use because of difficult access to the first interspace,

and worries of shoe irritation on the incision line. The author has been performing a medial incision for the last several years, and has never experienced shoe irritation of the incision line. The author's modification of the medial incision permits excellent access to the first interspace, and is detailed below.

TECHNIQUE

A medial longitudinal incision is made over the first metatarsophalangeal joint, ending distally at the level of the interphalangeal joint (IPJ). A transverse dorsal incision is then made over the IPJ, joining the initial medial incision, creating an L-shaped incision. This incision creates a dorsal flap of tissue which must be meticulously dissected in order to prevent tissue necrosis and wound dehiscence. The skin and subcutaneous tissues must be reflected as one layer to preserve vascularity to the skin. The most direct access to this tissue plane is at the level of the IPJ. The skin incision is deepened until the fine retinacular layer over the long extensor tendon is identified. This is the tissue dissection plane from which a full thickness skin flap is created. Dissection is then directed proximally towards the medial incision. Blunt dissection is appropriate dorsally, but the denser medial tissues require sharp dissection with a knife. At this point, surgical exposure to all aspects of the first metatarsophalangeal joint is total and complete (Figs. 1A-1E).



Figure 1A. The skin incision is marked, both medially and dorsally.

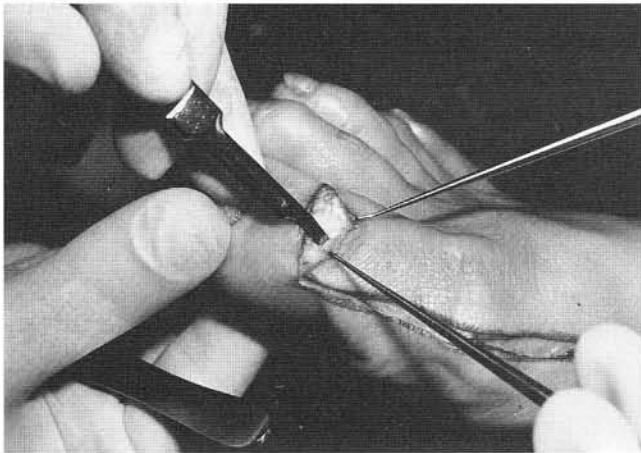


Figure 1B. Initially, dissection is deepened distally.

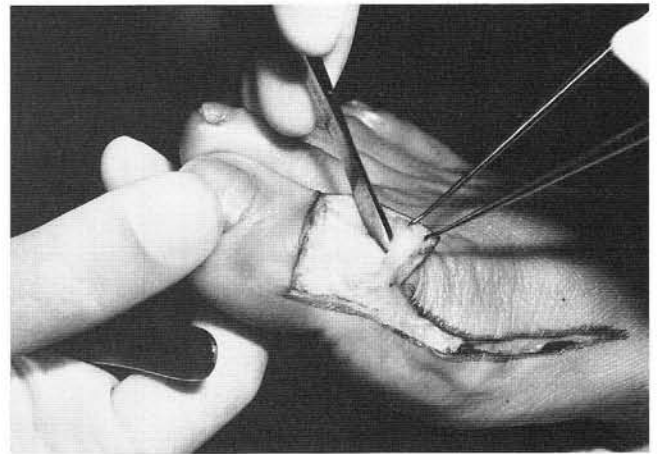


Figure 1C. A fascial plane is created, using the extensor hallucis longus as a guide

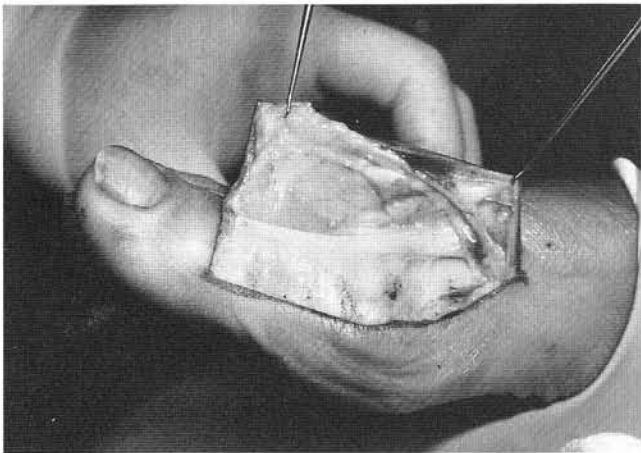


Figure 1D. A full-thickness skin flap is created. Subcutaneous tissue is reflected with skin.

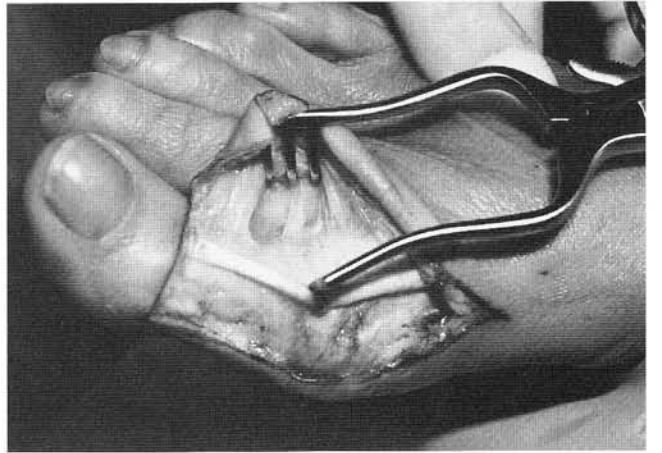


Figure 1E. Excellent exposure is afforded to the interspace.

OBSERVATIONS

The author has been utilizing this technique for the last several years. Wound dehiscence or tip necrosis of the skin flap has never occurred. Shoe irritation of the mature scar has never been a problem. The only adverse effect encountered has been an infrequent partial sensory loss at the dorso-medial aspect of the hallux, just distal to the incision and proximal to the nail bed. These minor complications are far out-weighed by the advantages this procedure offers. As the weight-bearing foot is viewed from above, the postoperative scar is not visible. The dorsal portion of the scar falls in the skin crease of the IPJ and is inconspicuous. The medial-most part of the incision tends to be oriented within the RSTL, producing a fine-lined scar (Figs. 2A,2B). Additionally, the scar passes through the joint axis on the medial side. It has no effective lever arm on the joint, therefore any contracture or inelasticity will have no effect on joint dorsiflexion or plantarflexion.

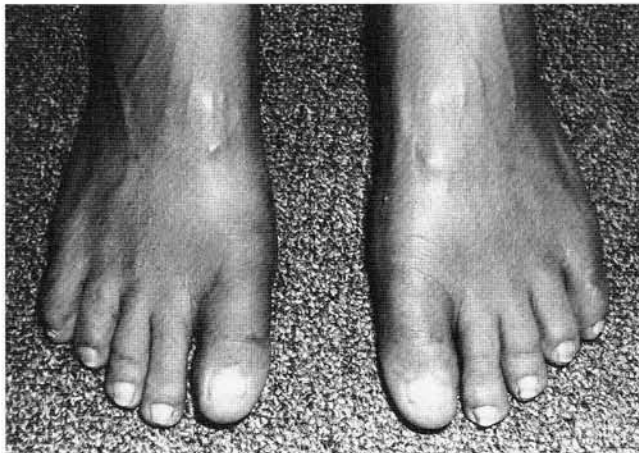


Figure 2A. Postoperative dorsal view. Note that the skin incision is barely visible.



Figure 2B. Medial view demonstrating the incision line.

SUMMARY

The modified medial incision approach to hallux valgus provides excellent exposure. The minor adverse effects from this procedure are far out-weighed by the improved functional results and superior clinical appearance.