

Procedure for the Polydactyly removal using Digiclamp

The concept of the science revolves around excision and removal of the type B post axial digit instead of suturing the polydactyl digit after birth, which is based instead on the concept of "choking off" the blood supply and allowing the digit to develop dry necrosis and fall off after discharge home in the space of 7-21 days later. In my practice, during the past 10 years, I had begun compressing the digits of these infants (with hemostats or needle-holders) and excising them on the spot. When using these other instruments, I had some post procedural bleeding which then required other interventions, such as cautery with Silver Nitrate or Aluminum Chloride to resolve the bleeding. The need for a specific type of clamp that would compress these small digits at the base flush with the skin became obvious to me. I began to develop a small easy to use clamp that would compress the pedicle of these lesions with enough compressive force to fuse the skin. The clamp would have to be small enough to allow its operator to squeeze into very small spaces such as that in the pedicle base of extra digit in premature infants, and in whom the pedicle of the digit usually measures as little as 1-5 mm in width, and 1-2 mm in height if a "nubbin" has formed (usually as result of autoamputation in utero). These clinical needs led to development of the Digi-Clamp

Procedure for polydactyly:

Identify type of Polydactyly; if it is Type B Postaxial Polydactyly, the Digi-Clamp (Regist.Trademark) is appropriate for use in these patients (see picture A below)



Picture A. Example of Type B Post Axial Polydactyly

Obtain consent for procedure (and photographs) from patient's parents

Prep area around digit the Polydactyl digit base extending into the lateral surface of the normal digit using: Hibistat/ Betadyne & Alcohol (see picture B below)



Picture B. Example of preparing the Polydactyl for resection

Provide Sucrose oral solution to infant prior to injection of local anesthesia to infant

Block digit by injecting approx 0.2 ml of 1% Lidocaine solution subcutaneously proximal to pedicle of digit and distal to the metacarpo-phalangeal joint (see picture C below)



Picture C. Example of local anesthetic block

Wait approximately 1 minute for anesthetic effect to take effect

Apply Digi-Clamp making sure it is flush with lateral aspect of digit at base of pedicle, but free of any normal skin around the pedicular base (see picture D below)



Picture D. Example of clamp application and closure at base of pedicle

Leave Digi-Clamp locked on digit for minimum of 3 minutes (digit may blanch slightly. See picture E below)



Picture E. Example of clamp closure and blanching of pedicle

After minimum of 3 minutes have elapsed, cut extra digit off with scalpel (flush with external clamp surface; that facing away from patient's digit) while maintaining the clamp in place; no bleeding should occur during this part of the procedure (see picture F below)



Picture F. Example of cutting the Polydactyl flush with clamp surface

Unclamp the Digi-Clamp (a translucent piece of skin should be seen where the digit's pedicle had been previously. (see picture G below)



Picture G. Example of the translucent fused skin where the pedicle had been

Cover translucent remnant of skin with spot band aid (see picture H below)



Picture H. Example of covered removal site after Digi-clamp excision