THE OPERATIVE CORRECTION OF WEBBED FINGERS

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One of the oldest and simplest ways of remedying webbed fingers is that of Rudtorffer. He passed a lead wire through the proximal end of the web and kept it there until the edges of the hole had cicatrized; the remainder of the web was then divided. This method has fallen into disuse. It takes a long time to establish the opening, is distressing to the patient, and is apt to fail and be unsatisfactory from the amount of cicatricial tissue it causes.

Another operation is that of Zeller.[1] He dissected a triangular flap from the proximal end of the web on the dorsal side and slit the remaining portion. The triangular flap was then brought forward between the fingers and its apex sutured to the palm, and the raw surfaces on the sides of the fingers sutured as nearly shut as possible. Norton[2] modifies Zeller's procedure by making two small flaps, one from the dorsal and another from the palmar surface.

Dieffenbach,[3] in 1845, introduced square flaps. He raised a square flap from the dorsal aspect of the hand and sewed its end to the palmar surface. The remainder of the web was divided by a simple incision. Adhesive plaster was used to bring the wounds of the fingers together, and charpie laid in between them. He stated that he was very successful with this method.

Diday, about the year 1848 or 1849, made two square lateral flaps, one on each side of the web, extending its whole length. One flap was then wound around the finger to which it was attached, and the other likewise around the opposite one. This operation apparently is the most popular one at present.

Fowler,[4] for certain special cases with extensive cicatrices,[2] sug-

[1] Uber die ersten Erscheinungen vener. localkrank. Wien, 1810, p. 109. Quoted by Treves.
[2] British Medical Journal, 1891, vol. ii. p. 931.
[3] Die Operative Chirurgie, p. 744.
[4] Dennis' System of Surgery, vol. ii. p. 186.

gests taking two long, slender flaps from the dorsum of the hand and bringing them forward, through buttonholes in the skin, and suturing them in the divided web.

The choice of operation depends on the character of the web to be operated on. Rudtorffer's operation with the lead wire is not desirable under any circumstances. The operation of Zeller is shown in Fig. 1, between the ring- and middle-fingers. Its main object is to secure a separation of the fingers by healthy skin and the avoidance of cicatricial tissue at that point. If this is done re-forming of the web is prevented, even though suppuration of the remaining portion of the wounds on the fingers occurs. It is a good operation

FIG. 1.

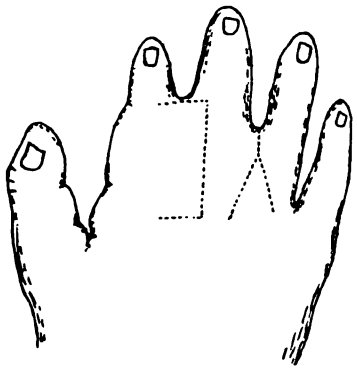
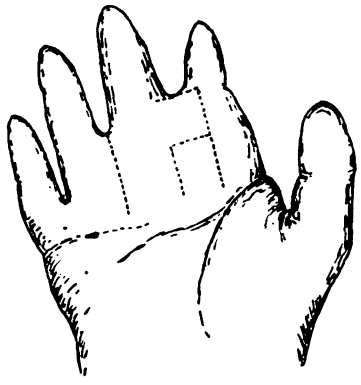


FIG. 2.



when used where the fingers are not too closely bound together and when the web is thin. I do not see that there is much to be gained by using two flaps, as does Norton, instead of one. The operation of Diday seems to be the one most extensively used. It is figured in all our text-books and recommended by most of our leading authorities. Why it should be so popular is difficult to see. Its main advantage is that the cicatrix on one finger lies more toward the dorsal aspect, while on the other finger it is more toward the palmar. Therefore, the raw surface on one finger is not opposed to a raw surface on the other. Its bad features are many. Bardeleben[1] says it is liable to fail through suppuration and sloughing. Treves[2] says:

[1] Lehrbuch der Chirurgie und Operations., vol. iv. p. 718.
[2] Operative Surgery, vol. ii. p. 131.

"The procedure is difficult and requires infinite care in its performance. The most probable fault will be the fashioning of flaps, which prove, when adjusted, to be too narrow toward the proximal extremity." Its most objectionable feature is that there is no healthy skin placed in the web, therefore a cicatrix forms at this point which, if it heals, tends to cause a binding together of the fingers, while if accurate approximation of the flaps is not secured a raw surface is left not only at the web but also on the adjacent sides of the fingers, and these are apt to grow together in one cicatricial mass, which again binds the fingers together. Zeller and Dieffenbach struck the true keynote of success when they insisted on the separation of the fingers at the web by a strip of healthy skin, and, to my mind, no operation is desirable unless it possesses this feature.

In the hand illustrated in Figs. 1 and 2 the web between the ring- and middle-fingers was neither so long nor so thick as that between the index- and middle-fingers, and on it I did the operation of Zeller with perfect success; the apex of the flap was turned over and sutured to the end of the incision in the palm. The raw surfaces on each finger were then united by silk sutures, and primary union was obtained. The web between the index- and ring-fingers was long and thick. A square flap extending the whole length of the web, with its base on the index-finger, was then cut on its dorsal surface. On the palmar surface there was first cut a small square flap with its base toward the palm. Immediately above this, and extending from its top to the distal end of the web, was cut another square flap, with its base on the middle-finger. These flaps are shown in Fig. 2. The square palmar flap was turned in between the fingers and sutured to the healthy skin on the dorsum. The long dorsal flap on the index-finger was wound around it, covering in the raw surface, and sutured to the healthy skin in front. The upper square flap on the middle-finger was next wrapped around it and covered up the distal half of the raw surface on the middle-finger. The raw surface on the proximal half of the middle-finger was left to granulate. Union of the sutured flaps occurred, and after a short time the granulated surface had healed over, the procedure being perfectly successful. In order to obtain rapid healing without granulating surfaces, one must approximate the flaps without too much tension. To facilitate this the flaps should only be of a thickness sufficient to insure their

vitality; any fatty tissue that is unnecessary for this object should be removed. Also the fatty tissue of the raw surfaces to be covered by the flaps should be cut away to some extent for the same purpose, as well as some of the tissue at the web. By operating in this manner one is enabled to cover one finger entirely, the web and half of the opposite finger. The only raw surface left to granulate has healthy skin below as well as above it, and also on the other finger directly opposite, so there is no possibility of it becoming anywhere adherent. The objectionable cicatrix at the proximal end of the web, which occurs in Diday's operation, is avoided, and success is more assured.

DISCUSSION.

DR. GIBNEY said that he had had very little experience with web fingers. The most satisfactory operation had been one in which an incision was made along the dorsum and along the palmar aspect of the adjoining finger, and flaps were brought around and united. He could recommend this operation very highly.

DR. GOLDTHWAIT said that there was no need of leaving a raw surface. His plan had been to get skin-flap enough from one place or another to thoroughly cover in one finger, and then to cover the rest of the raw surface with Thiersch grafts. This avoided entirely the disagreeable cicatrix which would otherwise form.

DR. H. L. TAYLOR said that at the Hospital for Ruptured and Crippled there had been recently a case of club-foot in which three of the fingers of one hand were thoroughly matted together. The case was referred to Dr. Dawbarn, who operated without making any flaps, using Thiersch grafts, and the result was exceedingly good.

DR. DAVIS said that he was sorry that Dr. Gibney preferred the operation of Diday, for that had a tendency to leave a cicatrix in the middle. Of course, an ideal operation was one in which there was no raw surface, but in an infant's finger the granulating area left on the side of one finger was so small that it quickly healed and did not leave any objectionable cicatrix.