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## Three Useful Ways to Avoid Amputation in Advanced Dupuytren's Contracture

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Every surgeon dealing with Dupuytren's contracture will meet patients in whom the volar skin in a finger either is too scarred or is insufficient and skin coverage is necessary. In some cases the possibilities for volar fasciectomy have been exhausted: the deep structures are so heavily involved in the scar that volar surgery is impossible. Often an amputation appears inevitable—but aged patients will always be happier if another solution can be suggested. It is astonishing that so little is written about this problem. The papers by Bruner, by Hueston, by Skoog, and from the "Groupe d'Etude de la Main" have indeed very little to say about this not at all uncommon situation.

I have used three different methods for years to overcome these problems: the cross finger flap, the arthrodesis with shortening at the proximal interphalangeal joint and sometimes even of the distal interphalangeal joint, and wedge osteotomy distally in the proximal phalanges with healing in dorsal angulation.

### **Cross Finger Flap**

The cross finger flap from the dorsal aspect of the neighboring finger is, of course, used when sufficient skin cannot be mobilized from the volar side of a finger or when it is too fibrous. Usually the incisions can be planned so that the whole skin defect can be brought together and located over the proximal phalanx. A dorsal flap of adequate size from the neighboring finger can then be swung over to cover this defect. The flap must reach to the midlateral line on the other side of the recipient finger. A not uncommon error is to make the flap too small. Today it is known that the flap at the donor site can be taken without functional loss even from areas over the joints of the donor finger. The vessels to the flap must be preserved. The defect must be covered with a full

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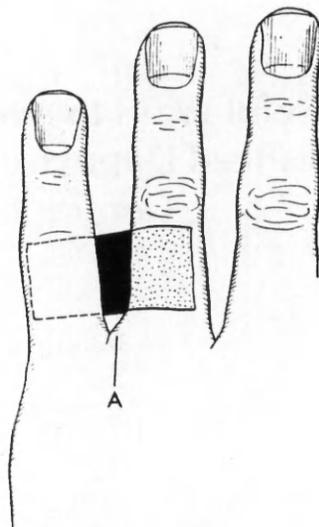


Figure 1. The cross finger flap. The bottom of the web (A) must be preserved.

thickness graft, which I usually take from the volar side of the elbow region on the same arm. Between the two fingers the web must be preserved very carefully, and this means that there will be a small hole to dress at the base. The skin should be sutured in such a manner that most of the raw area is covered.

The artificial syndactylism made in this way usually does not prevent the patient from going back to work at an early date. I prefer to delay the separation, often for several months. If separation is performed too early, persistent edema in the flap will lead to subsequent fibrosis. A later separation therefore gives a more definite cover. Sometimes it is even difficult to get an active patient back for separation of the fingers: they have minimal problems with the temporary syndactylism (Fig. 1).

#### Finger Arthrodesis

I have described my technique for finger arthrodesis previously (Fig. 2).<sup>2</sup> Especially in the little finger, when volar tissues are too fibrous, a resection of the proximal interphalangeal joint with a 1 to 1.5 cm.

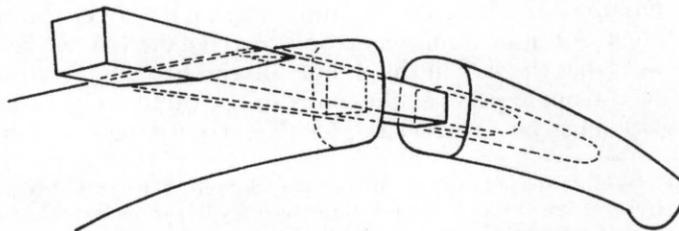


Figure 2. The technique of finger arthrodesis with a quadrangular bone peg from the proximal part of the ulna.

shortening and a good arthrodesis in about 25 degrees of flexion will provide an excellent result: the finger will be stable and painless in six weeks. The extension obtained will permit the patient to use his gloves. The good flexion of the metacarpophalangeal joint will make the lost flexion function of minimal importance.

**Wedge Osteotomy**

Wedge osteotomy of the proximal phalanx with shortening can be used in all fingers and is often a good solution in advanced and difficult cases in which the possibilities for volar surgery are exhausted. The method can be used in several fingers of the same hand. The specific method I use for this operation is illustrated in Figure 3. The instrument

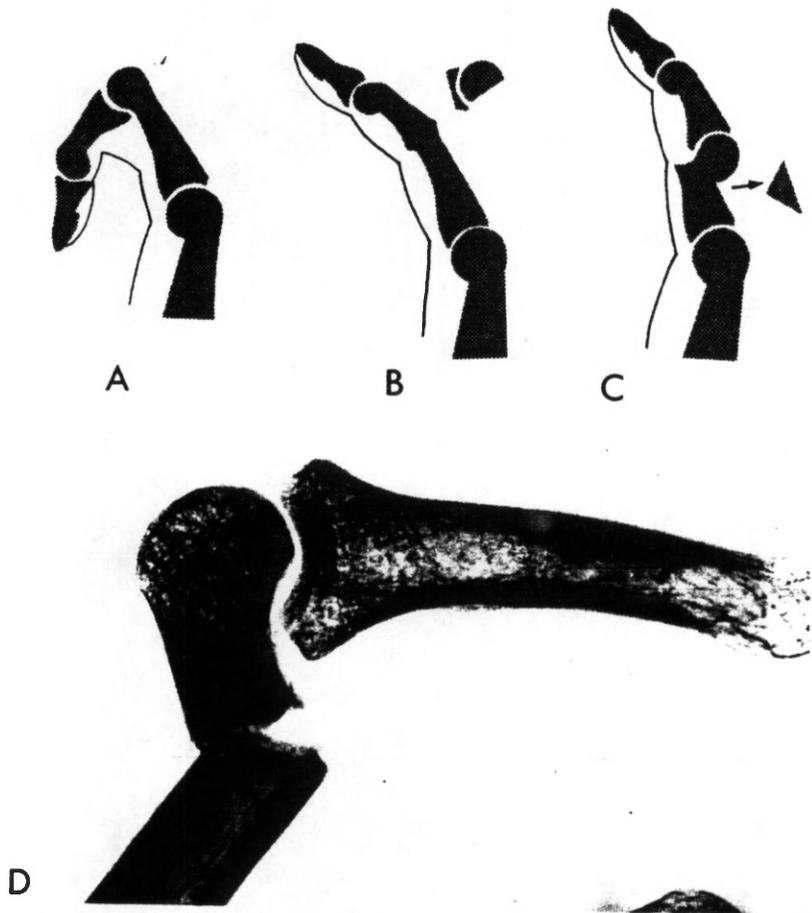


Figure 3. Scheme showing the principles of the resection of the proximal interphalangeal joint with arthrodesis (B) and of the wedge osteotomy (C) in the proximal phalanx. The last mentioned method is also shown in the x-ray view. Active motion of the fingers should be started before the x-ray films show healing.

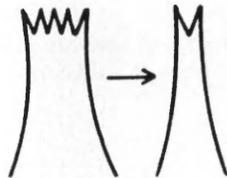


Figure 4. The saw blade of an oscillating saw is narrowed to two teeth.

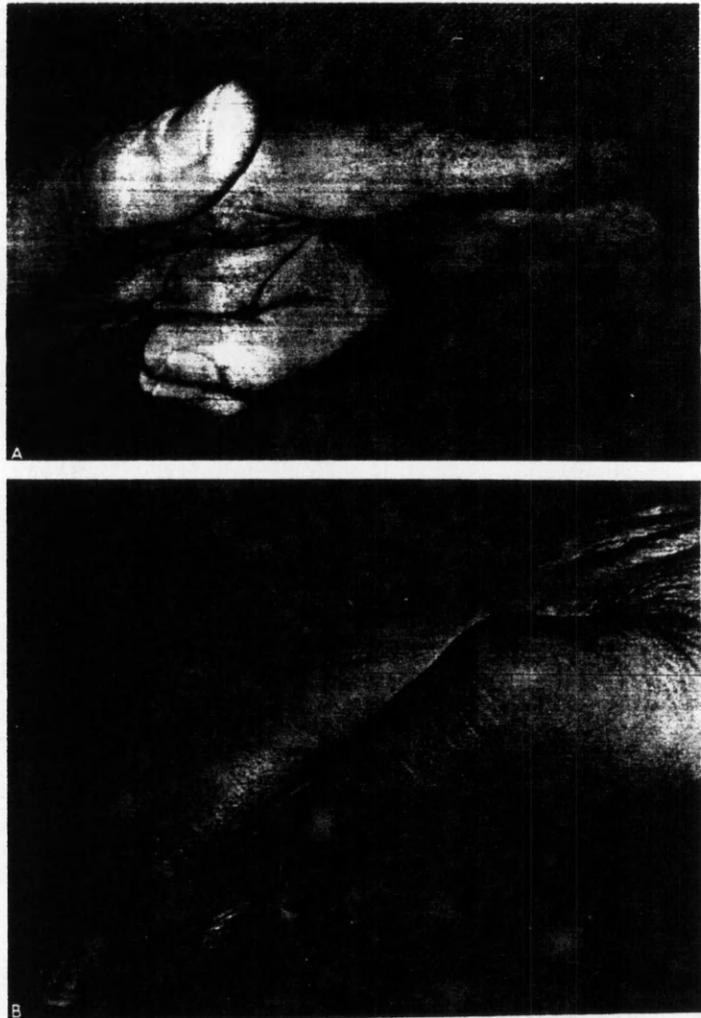


Figure 5. The finger deformity following the wedge osteotomy is insignificant. The x-ray view shown in Figure 3 is from the same patient as shown here. The ring and little fingers are shown before (*A*) and after (*B*) surgery.

I use is an oscillating saw, in which I have narrowed the blade considerably, leaving just two teeth (Fig. 4). With such a blade it is possible to protect the soft tissues from the saw. The shortening of the bone must be adjusted according to the volar structures. Even 90 degrees of dorsal angulation is possible. It is quite astonishing how insignificant the finger deformity will be after healing (Fig. 5). I keep the fingers in plaster in the correct position for three to four weeks. It is mandatory, however, to obtain correct rotation position in the plaster.

A follow-up study of patients in whom these three methods were used has been carried out with my collaborator, Eicher, and was published in 1970.<sup>1</sup> It can be stated that in most of the patients reviewed, a functionally satisfactory result was obtained. Amputation of one or more severely contracted fingers can thus be avoided except in very rare instances.

### REFERENCES

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