Common Hand Problems with Different Treatments in Countries in Asia and Europe

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KEYWORDS

• Fingertip defect • Replantation • Tendon repair • Mallet finger • Carpal ligament injury
• Distal radius fracture • Nerve compression

KEY POINTS

- Distal pulp defects or amputation in the fingertip can be treated with either a flap transfer or dressing changes. Dressing changes can be used even in patients with exposure of the distal phalanx but may take several weeks or over 1 month to 2 months to heal. This is a popular method of treatment in Europe.
- Distal digital tip replantation is performed by some Asian microsurgeons but rarely in Europe. Replacing the amputated tip as a composite graft is common practice in children.
- A peripheral tendon suture is less important and less mandatory when a strong core suture repair is used in flexor tendon repair. Some European surgeons do not use a peripheral suture and still have good outcomes.
- Mallet finger with greater than one-third articular involvement is mostly treated nonoperatively but surgically depending on displacement or joint subluxation, but the degrees of subluxation or fracture displacement, which leads to surgery, vary greatly.
- The indications for use of wrist arthroscopy in assisting surgical reduction and internal fixation of intra-articular distal radius fracture vary greatly. The need of immediate repair of disrupted carpal ligaments at the time of this surgery is neither defined nor agreed.
- All agree that clinical entities, such as thoracic outlet syndrome, complex regional pain syndrome (CRPS), radial tunnel syndrome, pronator syndrome, and radial tunnel syndrome, exist, but their diagnosis is subjective. In making a diagnosis, a second opinion should be sought, and in treating these patients, spontaneous recovery of these conditions in most patients should always be clearly recognized.

INTRODUCTION

Common hand problems are treated differently in different countries. This article attempts to bring together the views of surgeons from different countries on some of the most common hand problems that hand surgeons encounter in daily

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practice. In practice, the correct treatment of these problems may be the most important and influential to patients. The lead author, JB Tang, formulated several questions, which were sent to 6 senior hand surgeons from 6 countries—3 in Asia and 3 in Europe—for them to give views and comments. Their replies are presented.

DIGITAL SOFT TISSUE REPAIRS

Question: I know Dr Omokawa worked on the anatomy of small vascularized flaps from the hand for digital repairs and also used these flaps in practice. My questions to Dr Omokawa are as follows. Dr Omokawa, do you or (or other Japanese hand surgeons) use these flaps often and what comments do you have on small intrinsic flaps from the hand if your patients have small soft tissue defect; what is your choice—a pedicled flap, a free flap, or something else? Dr Tay, can you tell us the preferred methods in Singapore? I also would like to know the views on fingertip repairs from European colleagues. I know that not performing a flap transfer, leaving the wound in a moist condition with dressing changes, is common in European countries. My impression is that European colleagues treat those tip defects with occlusive dressings, allowing self-regeneration more often than Asian surgeons. Do you use flaps or simply do dressings and let the wound regenerate?

Shohei Omokawa

In Japan, plastic hand surgeons prefer to use intrinsic hand flaps for digital soft tissue defects more frequently than orthopedic hand surgeons. Recent perforator flap reconstruction enables a range of soft tissue coverage in hand surgery.[1]

My indications for flap surgery in digital soft tissue defects are:

1. Skin and soft tissue defects with exposed bone, tendons, or nerve
2. Fingertip injuries with a massive pulp defect

For small soft tissue defects, I use occlusive dressing. Reverse homodigital artery flaps are rarely indicated because 1 of the palmer digital arteries is sacrificed. A pedicled cross-finger, a thenar flap, or a free flap also is rarely used in my practice.

For most cases, I use 1 of 2 homodigital island flaps for reconstruction of soft tissue defects. The first is a neurovascular pedicle volar advancement flap, and the second is dorsal middle phalangeal perforator–based propeller flap with innervation by the dorsal digital nerve branch.[2] The clinical result from in our unit, however, measured with the pegboard performance test was not satisfactory in patients with flap surgery in the index or middle fingers. Comparison of the test between using the injured finger and the adjacent normal finger revealed that the score of the affected finger was worse than that of the adjacent finger, indicating that digital performance after reconstruction with this flap was still limited despite the patients showing high satisfaction and good sensory recovery. I anticipate that future novel approaches can overcome the limitation of flap surgery to produce cosmetic and functional result equal to those of the adjacent finger.

Shian Chao Tay

For fingertip defects more than 1 cm^2, I prefer a cross-finger flap followed by V-Y plasty. Some surgeons also use a thenar flap. We have had good outcomes with the cross-finger flap, which is a reliable workhorse flap for fingertip resurfacing. Other options for these larger defects include:

1. Homodigital flaps, for example, the spiral flap[3] and the neurovascular island flap[4]
2. Heterodigital flaps, for example, the heterodigital arterialized flap,[5] which does not take the digital nerve and leaves the pulp of the donor finger intact

The heterodigital arterialized flap may be harvested with a dorsal vein to enhance venous return. In situations where the dorsal vein affects flap transfer, the vein can be divided and then reanastomosed after flap transfer.[6]

Thomas Giesen

We use the moist dressing in Allen zone 1. In zone 2 it is more dependent on the experience of the surgeon. Our workhorse flaps for the fingertip are the V-Y and the Segmüller flaps. If the bone is exposed or if the volume missing will result in a square fingertip, we then use normally a local flap.

Michel Ernest H. Boeckstyns

In my country, Denmark, we rely on the ability of spontaneous regeneration of the skin of the pulp and, whenever possible, use conservative treatment with changing of dressings until healing. There are a variety of regimens to achieve this. Pulp regeneration tends to give good results with preserved sensibility and minimal scar problems.

If some phalangeal bone is prominent, I revise it carefully with a rongeur. In patients with a tangential amputation and a larger area of uncovered