

The Qatari Flap for Fingertip Reconstruction: Versatility, Reliability, Clinical Applications, and Review of Literature

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It is a pleasure to write this Discussion on an innovative technique in fingertip reconstruction reported by Al Lahham et al,¹ published in the July 2023 compendium of *PRSGlobal Open*. The accompanying video was very helpful. It will certainly help those surgeons who wish to try this flap.

Over the last half century, many techniques have been introduced for fingertip reconstruction, starting with the seminal reports by Kutler² and Atasoy et al.³ The evolution of these techniques shows, to some degree, the trajectory of flap advancements in plastic surgery, from simple local flaps to more complex flaps such as the perforator flap by Koshima et al.⁴ The reference list accompanying the article by Al Lahham et al¹ provides a very useful resource for interested readers.

My overall impression is that the Qatari flap, as described by the authors, seems to be an elegant technique, and the reported 94% flap viability is impressive. Its long pedicle certainly makes it a versatile flap with adequate reach to cover various fingertip defects.

Ostensibly, the merit of the flap is the ability to preserve the length of the digit. Certainly, in unique cases where cultural pressures demand this, the Qatari flap can be of great use. In my jurisdiction and in many other places in North America, where there is a need for faster recovery, the norm is for minor bone shortening and healing by secondary intention, minor revision amputation, or small local V-Y advancement flap in the emergency room setting.

To provide a critical assessment of the merits of this flap, one should review carefully the supplementary table showing the details of the authors' 42 cases. It appears to this reviewer that some cases (eg, Fig. 1) in their article could have been reconstructed with a modified V-Y flap technique.⁵ A modified V-Y flap can preserve the length of the digit if the transverse defect is 1.5 cm in length or less, and up to 2 cm in dorsal oblique defects. In contrast to the well-known flap by

Atasoy et al³, the modified V-Y advancement flap leaves the base of the flap unsutured and protects against tight closure, which can lead to ischemia of the flap. Donor defects at the base of the advancing flap (up to 1 cm) epithelialize within 2 weeks, an observation that most hand surgeons are aware of from Dupuytren contracture surgery. Transverse and dorsal oblique defects are ideal with such a modified V-Y flap. These can easily be performed in the emergency department, rather than in the main operating room. The main advantage of a modified V-Y advancement flap is that it preserves the sensation to the reconstructed tip, which distally based flaps, including the Qatari flap, are not expected to do.

Dorsal oblique defects even with small dorsal bone exposure can also heal by secondary intention, provided the bone is not allowed to desiccate. The defect can be dressed and followed up in the hand clinic. This has the advantage of allowing glabrous skin to advance and cover the exposed bone at the tip of the digit and preserve sensation at the tip.

The main advantages of the Qatari flap, because of its larger size, seemed to be the reconstruction of large fingertip defects: 1.7 cm or larger. This flap can be advantageous in the following situations: (a) volar oblique defects, (b) the circumferential degloving of the finger tip and, (c) large lateral and medial defects to the distal phalanx, as described nicely in Figure 4 of their article.

It behooves all of us to practice evidence-based hand surgery, and this is applicable to fingertip reconstructions as well. The principles of evidence-based medicine were first espoused by Sackett et al⁶ for the medical specialties. These principles have been adapted to surgical problems.^{7,8}

In short, these principles state the following:

First, in dealing with a surgical problem (in our case, the fingertip defect), we consider the patient's preferences and actions. For example, a patient who needs to return to work as soon as possible may opt for revision amputation rather than for complex fingertip length preservation. Conversely, a patient whose cultural pressures demand preservation of the digital length, we may consider flap closure. Second, we consider the health-care resources available to us. For example, in a low-income country, we may not be able to justify using the operating room resources or hospital admission for a day to preserve a fingertip with a Qatari flap when other urgent surgical problems are in queue and in competition for the same resources. Third, we identify the best research evidence to solve the surgical problem, which, in our case, is the preservation of the length of the

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digit. Unfortunately, the evidence so far is considered weak, as most reports are based on case series (level IV evidence), just as the present Qatari flap report. Fourth, we consider the clinical setting and circumstances in which we are working. For example, if one works in Doha and the Qatari health-care system provides the hospital resources to reconstruct a fingertip, then this may be possible. If one is practicing in Ukraine in the middle of Russia's war on Ukraine (as of this writing), it is unlikely to justify the use of the Qatari flap. Finally, we consider our own skills. Certainly, the new generations of plastic and hand surgeons are expected to have mastered microsurgical techniques. Under microsurgical loupes, the execution of the Qatari flap is doable.

The third condition mentioned above (ie, "best available evidence") is still lacking. Robust comparative studies of fingertip reconstruction are needed. As most health-care systems around the globe are presently under stress, all of us have an obligation to be mindful of how we spend scarce health-care resources. Recommendations for such robust studies, coupled with economic evaluations, have been suggested and are strongly encouraged.⁹

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DISCLOSURE

Dr. A. Thoma is the editor of the book Evidence-Based Surgery: A Guide for Understanding and Interpreting the Surgical Literature and receives royalties from Springer.

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