

Case Report

The ulnar digital artery perforator flap for little finger reconstruction

Aakansh Jain, Sandesh Bharat Singh*, Abhijat Mishra, A. K. Singh

Department of Plastic Surgery, King George Medical University, Lucknow, Uttar Pradesh, India

Received: 05 November 2020

Revised: 13 November 2020

Accepted: 17 November 2020

***Correspondence:**

Dr. Sandesh Bharat Singh,

E-mail: dr.sndsh@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

An ulnar digital artery perforator flap has been used for little finger reconstruction. The flap is found to have a reliable blood supply, it is being perfused by a constant sizeable perforator. This paper helps describes a case report of a patient with injury to little finger with exposed bone for which a ulnar digital artery perforator flap was done. The position of the perforator was confirmed intraoperatively by an exploratory incision before committing to the distal incision. The flap used to cover the flexor aspect of the little finger has given good result.

Keywords: Ulnar artery perforator flap, Perforator flap, Little finger reconstruction

INTRODUCTION

Soft tissue cover of the little finger has been a challenge for the reconstructive surgeon. The options for reconstructing the flexor aspect of the little finger are usually very limited. The cross-finger flap is considered the workhorse flap for little finger reconstruction.¹ The hypothenar area has been used as a donor site very infrequently in clinical practice.²⁻⁵ Distant pedicled flaps are usually bulky and may sometimes give unpleasant donor site deformities. Free flaps may not be available to all and require surgical skill. In the present article, we have done a digital ulnar artery perforator flap for little finger reconstruction. It is a relatively newer flap based on the perforator of the ulnar digital artery used to resurface the little finger. The flap has the advantage of being thin and can be done in a single stage with minimal donor site morbidity.

CASE REPORT

A 25 years old gentleman presented with right hand partial amputation at proximal phalanx level of 3rd to 5th fingers.



Figure 1: Pre-operative image.



Figure 2: Intra-operative marking.



Figure 3: Intra-operative image of perforator.



Figure 4: Post-operative image.

He accidentally cut his fingers with chara cutting machine and presented to emergency department after 2 days.

Stump closure was done for 3rd and 4th fingers. Little finger has part of middle phalanx spared but degloved so an ulnar digital artery perforator flap was planned and done. The position of the perforator was confirmed intraoperatively by an exploratory incision before committing to the distal incision. The flap covered the part of middle phalanx well and length of the little finger was preserved. During post op the flap had some venous congestion, but it recovered.

DISCUSSION

The ulnar digital artery perforator flap has been described by Panse et al. They have described the flap anatomy, design, versatility in cadavaric dissections.⁶

Cross-finger flaps have been commonly used for coverage of the flexor aspect of the little finger. It is however a staged procedure with immobilization and potential for stiffness of the joint.¹

Gu et al have used free flaps from the hypothenar region for reconstructing hand defects with good results.³ However, use of free flaps is usually technically demanding and sacrifices the ulnar artery.

Omokawa et al, described the reverse hypothenar flap based on the ulnar pedicle.⁷ The arterial supply of this

reverse flap is by arterial communications between the radial and the ulnar palmar digital arteries of the little finger. There is however a potential for ischaemia of the little finger and cold intolerance due to sacrificing of the major vessel. The ulnar digital artery perforator flap used for resurfacing the palmar aspect of the little finger is based on perforator of the ulnar digital vessel. It has a thin and durable fasciocutaneous component to cover the flexor aspect and has a good colour and texture match. The donor site is closed primarily and has a good aesthetic outcome. It is a versatile flap, a single-stage procedure that can be used for post burn contracture defects as well as for traumatic defects, dupuytren's contractures and amputation stump coverage of the little finger.

The main limitation of this flap is risk of a neuroma formation over the hypothenar donor area. Though there was some congestion of the flap in the early post-operative period, it settled down subsequently.

Thus to conclude ulnar digital artery perforator flap is a reliable flap in good hands.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Johnson RK, Iverson RE. Cross-finger pedicleflaps in the hand. *J Bone Joint Surg.* 1971;53:913-9.
2. Kojima T, Imai T, Endo T. A study on cutaneous vascularity of the hypothenar region and clinical application as the hypothenar island flap. *J Jpn Soc Surg Hand.* 1988;5:645.
3. Gu YD, Zhang LY, Zhang GM. Hypothenar flap. *Chin J Hand Surg.* 1992;8:865.
4. Ueda K, Inoue T. The new palmaris brevis musculocutaneous flap. *Ann Plast Surg.* 1994;32:529-34.
5. Iwasawa M, Ohtsuka Y, Kushima H, Kiyono M. Arterialized venous flaps from the thenar and hypothenar regions for repairing finger pulp tissue losses. *Plast Reconstr Surg.* 1997;99:1765-72.
6. Panse N, Sahasrabudhe P. The ulnar digital artery perforator flap: A new flap for little finger reconstruction - A preliminary report. *Indian J Plast Surg.* 2010;43(2):190-4.
7. Omokawa S, Yajima H, Inada Y, Fukui A, Tamai S. A Reverse Ulnar Hypothenar Flap for Finger Reconstruction. *Plast Reconstr Surg.* 2000;106:4.

Cite this article as: Jain A, Singh SB, Mishra A, Singh AK. The ulnar digital artery perforator flap for little finger reconstruction. *Int Surg J* 2020;7:4204-5.