

First Dorsal Metacarpal Artery Flap for Thumb Defect Coverage

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INTRODUCTION:

Thumb defects present significant challenges in hand reconstruction because of their crucial functional and aesthetic roles. Using the first dorsal metacarpal artery (FDMA) flap has emerged as a valuable technique for addressing such defects¹. This series aims to share the surgical technique, indications, outcomes, and complications associated with FDMA flap reconstruction of thumb defects.

METHODS:

8 patients with soft tissue defects of the thumb between December 2021 and December 2023 underwent FDMA flap coverage. The donor site was covered with full thickness skin grafts. Bulky dressings were applied for 1 week, subsequently patients were started on an early range of motion rehabilitations. Motor outcome and mobility of the thumb was measured with Kapandji score and sensory outcome with static 2-point discrimination.

RESULTS:

The mean flap size was 33 x 20 mm. 7 flaps survived completely and 1 had distal flap necrosis, which was treated conservatively. The mean static 2-point discrimination was 7.75 mm. Cortical reorientation was complete in 4 out of 8 patients. The average Kapandji score was 9. The aesthetic outcome was excellent in 6 and good in 2 patients.



Figure 1: Surgical Technique and Outcome

DISCUSSIONS:

The FDMA flap, based on the dorsal branch of the radial artery, provides reliable neurovascular pedicle and allows reach to cover defect up to the tip of the thumb. The flap's robust blood supply facilitates early mobilization and rehabilitation, leading to improved thumb function and patient satisfaction.

CONCLUSION:

In conclusion, the FDMA flap is a versatile and reliable option for the coverage of thumb defects. It can significantly improve thumb function and quality of life for patients with thumb injuries or deformities.

REFERENCES:

1. Foucher G, Braun J B. A new island flap transfer from the dorsum of the index to the thumb. *Plast Reconstr Surg.* 1979;63(03):344–349.