

Abstract

Sural Artery Flap

Soo Bong Hahn, M.D., Jin Park, M.D., Bo Hyeon Kim, M.D.

Department of Orthopaedic Surgery, Yonsei University College of Medicine, Seoul, Korea

Purpose : Our clinical experiences in distally based sural artery island flap is presented to show the usefulness and the reliability as an alternative to flaps currently used for defect in lower extremity.

Materials and Methods : From February 1998 to September 2001, nine cases of soft tissue defects in the lower leg, the foot, and around the ankle were treated with distally based sural artery island flap. The cause of the wound was trauma in 6 cases, and osteomyelitis in 3 cases. Defects were located at the lower leg in 2 cases, at the foot in 3 cases and around the ankle in 4 cases. The results were retrospectively analyzed.

Results : The defect size ranged from 3 × 3 cm to 20 × 3 cm. Among 9 cases, 7 cases survived and 2 cases were failed. Flap failure was due to not including the deep fascia in one case and due to extensive soft tissue damage in the other case. Both failed cases were reoperated with the split thickness skin graft.

Conclusion : The advantages of distally based sural artery island flap follows : (1) reliable blood supply, (2) ease of flap elevation, (3) preservation of the major arteries, (4) less donor site morbidity. Owing to the advantages of this flap, we think it is useful for the soft tissue coverage of the lower leg, the foot and around the ankle. Also we believe it will continue to gain acceptance and use in the majority of lower leg reconstruction.

Key Words : Sural artery, Flap, Soft tissue defect

1. Masquelet⁷⁾ (1992), Hasegawa³⁾ (1994) (distally based superficial sural artery flap)

1998 2 2001 9 9 , × 4 cm size
16 cm, 2 cm

II.

Case 2(Fig. 3)

1. 4 6×10 cm

1998 2 2001 9 3 8 ,
1 9 , 3 68
32 . 9 6
10 cm, 2 cm
3

size 3×3
cm , 20×3 cm (Table 1).

2.

(pedicle) (pivot
point) (suprafascial network)
(anastomosis) (lateral
malleolus) 5 cm
2 cm (deep fascia)
(Fig. 1).

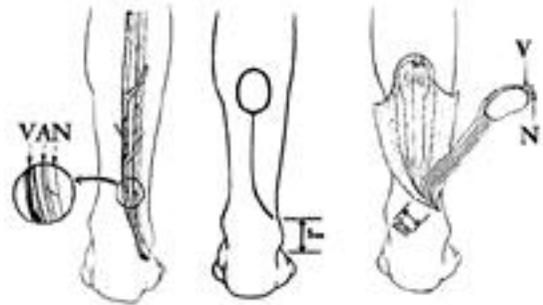


Fig. 1. Diagram is showing the relation of sural nerve (N), sural artery (A), and saphenous vein (V). The pivot point of the pedicle must be at least 5cm above the lateral malleolus to keep the anastomoses with the peroneal artery. The width of the pedicle is about 2 cm.

3.

Case 1(Fig. 2)

34 heel 4

Table 1. Patient Summary

Case	Age/Gender	Cause of defect	Site of defect	Defect size(cm)	Remarks
Patient 1	34/M	Osteomyelitis	Heel	4 × 4	
2	4/M	Trauma	Dorsum of foot	6 × 10	
3	5/M	Trauma	Lateral malleolus	5 × 4	
4	53/M	Osteomyelitis	Middle of lower leg	6 × 3	
5	58/M	Osteomyelitis	Distal 1/3 of lower leg	3 × 3	
6	39/M	Trauma	Medial malleolus	4 × 3	
7	68/F	Trauma	Medial foot	12 × 5	Severe soft tissue damage
8	3/M	Trauma	Anterior area of ankle	20 × 3	Elevation without deep fascia
9	22/M	Trauma	Heel	15 × 2	

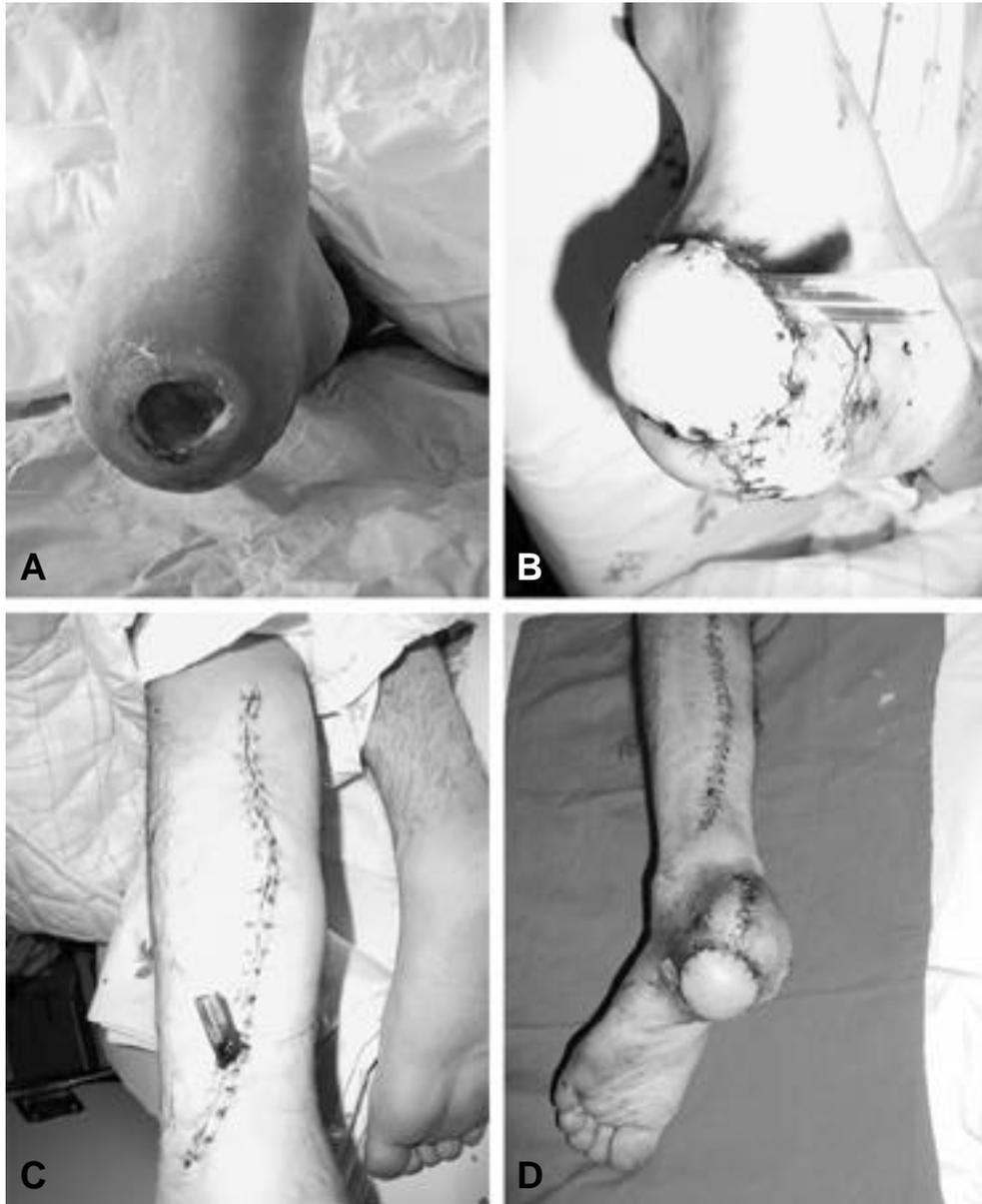


Fig. 2. Soft tissue defect due to osteomyelitis. **A.** The size of soft tissue defect over the heel is 4 × 4 cm. **B.** Sural artery flap is done over the heel. **C.** Donor site is closed directly. **D.** Result of flap and donor sites 1 month later.

III.

9 7 2
 (Case 7, 8 in Table 1). 2 1
 , 1

가

20

IV.

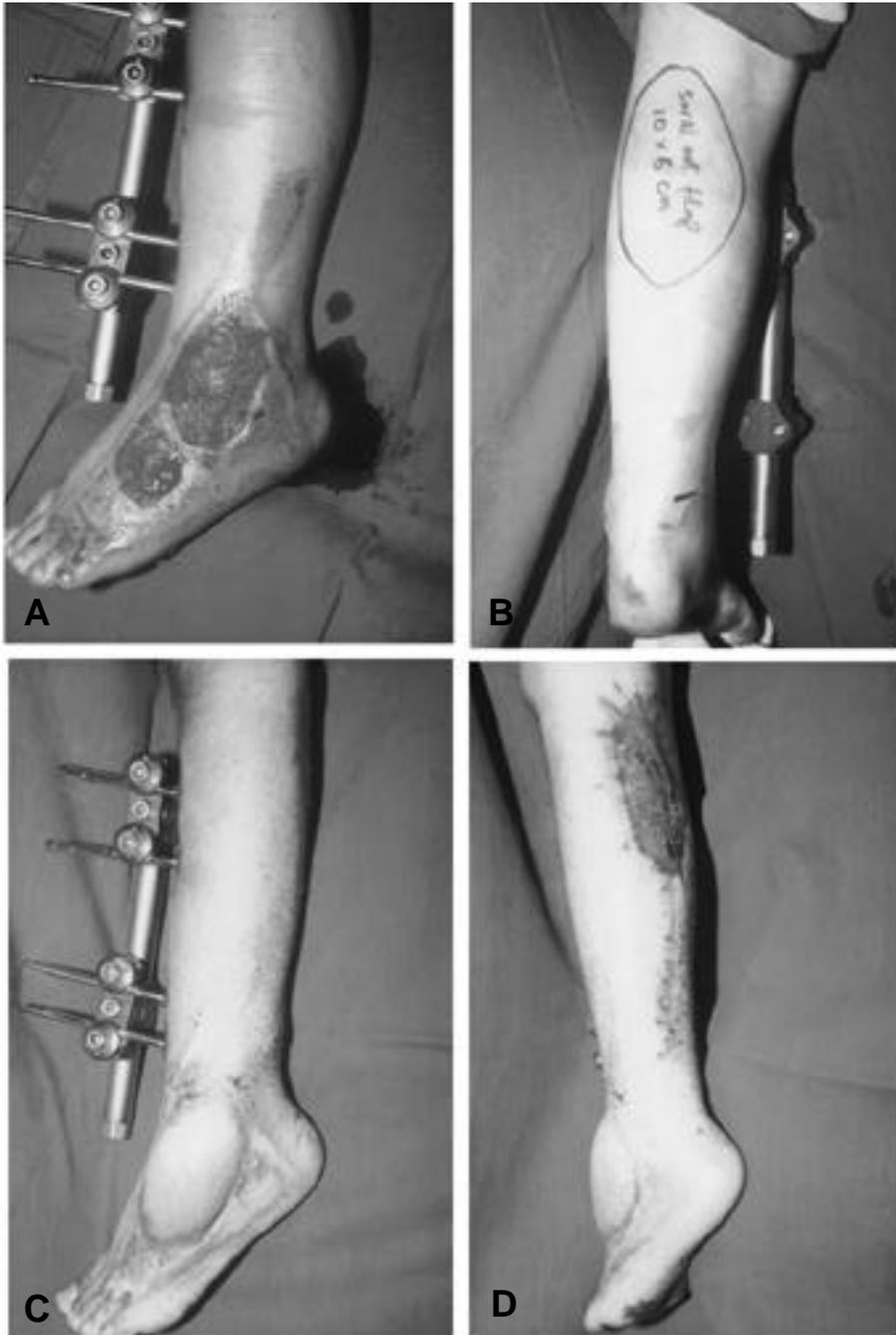


Fig. 3. Soft tissue defect due to acute trauma. **A.** The size of soft tissue defect over dorsum of foot is 5 × 4 cm. **B.** The flap is designed on the posterior aspect of the lower leg. **C.** Result of flap site 3 months later. **D.** Result of donor site 3 months later.

(fasciocutaneous flap)

. 1981 Ponter⁹⁾

가 ,

1992 Masquelet⁷
 (neurocutaneous
 flap) 1994 Hasegawa

(sural artery flap)

REFERENCES

가
 65% (ankle)
 (suprafascial network)
 , 35%
 (peroneal artery)
 (septocutaneous artery)
 (anastomosis)^{3,7}
 venae comitantes
 (reverse forearm
 flap)⁵⁾
 가
 가
 3 cm
 가
 가 4 cm
 V.

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