

**Abstract**

**A Histologic and Clinical Study between Temporoparietal Fascia  
and Scapular Fascia Free Flap**

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Fascia and fasciocutaneous free flaps (using perforators) are adequate reconstructive options with aesthetic and functional advantages, particularly for reconstruction of variable soft tissue defects of the extremities. Although various donor sites have been used for these concerns including temporoparietal fascia, serratus fascia, scapular fascia, fascial component of lateral arm and posterior calf fascia.

The authors used temporoparietal and scapular fascia as a free flap for coverage of soft tissue defects and we compare two flap mainly their histologic studies and clinical applications.

In our experience both fascia provide thin, pliable coverage for exposed bone and tendons and provide good postoperative functional restoration on the recipient area.

Histologically temporoparietal fascia flap has more rich blood supply and scapular fascia flap is rich in adipose tissue in their composition. In donor site morbidity, both flaps can bring satisfactory results about the donor sites, but the donor site of the temporoparietal fascia flap sometimes revealed conspicuous linear scar and transient alopecia in short-haired patients and the scapular fascia flap has a tendency to be wider and thicker in obese patients.

After successful application of the both fascia flap as a free flap in 38 patients (25 temporoparietal fascia, 13 scapular fascia) since 1995 ; authors recommend using the temporoparietal fascia flap for women, who tend to have more fat and longer hair, and the scapular fascia flap for men, who tend to be leand & shorter hair.

**Key Words** : Temporoparietal fascia, Scapular fascia, Free flap

(n=4), (n=10), (n=7), (n=3) 25 가  
 15 가 10 33.8 ,  
 16 , 9 5.6×8.3cm  
 9 , 4 13 ,  
 36.5 8.2×12.3cm (Table 1).  
 가 radial forearm fascia<sup>9)</sup>, lateral arm fascia<sup>19)</sup>, temporoparietal fascia, scapular (posterior thoracic fascia), serratus (lateral thoracic fascia)<sup>16)</sup>, posterior calf fascia<sup>7)</sup>  
 2. doppler ultrasound probe ( ) (connective tissue band) 가 T-incision 가  
 1. 가

**Table 1.** Clinical Experience

Free Flap/Type of Reconstruction	No. of Flaps(n=38)	Flap Size(mean)
<b>Temporoparietal Fascia</b>		
Hand dorsum	6	6.5 × 8.5cm
Digit(Hand)	3	2.3 × 5.0cm
Lower leg	5	7.2 × 9.8cm
Ankle area	4	6.0 × 7.3cm
Foot dorsum	6	5.0 × 8.5cm
Digit(Foot)	1	3.0 × 3.0cm
<b>Scapular Fascia</b>		
Lower leg	6	9.8 × 14.7cm
Ankle area	2	7.5 × 9.5cm
Foot dorsum	2	4.5 × 9.5cm
Digit(Foot)	3	7.7 × 11.3cm



**Fig. 1.** Temporoparietal fascia free flap is just elevated after T-incision.

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(Fig. 1).

doppler ultrasound

probe  
(triangular space)

(Fig. 2).

, doppler ultrasound probe,  
, pin-prick test  
가



**Fig. 2.** Scapular fascia free flap is elevated and split according to the vascular pedicle.

3.

가 1cm

Hematoxylin and Eosin stain

1

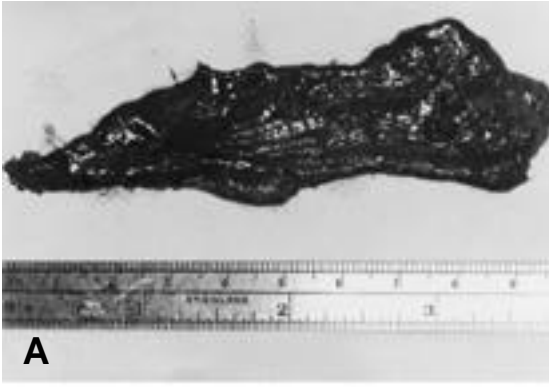
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3mm

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(Fig. 3).

5



**Fig. 3-A.** Harvested temporoparietal fascia free flap.  
**B.** Harvested scapular fascia free flap.



**Fig. 5-A.** Wide scar of obese man in the donor site of the scapular fascia free flap.  
**B.** Linear scar in the leaned man.



**Fig. 4-A.** Hairless scar of short hair man in the donor site of the temporoparietal fascia free flap.  
**B.** Donor site scar is camouflaged by long hair.

(Fig. 5).

(Fig. 6).

1

62

6 × 12cm

(Fig. 7).

2

31

1,2,3

1,2

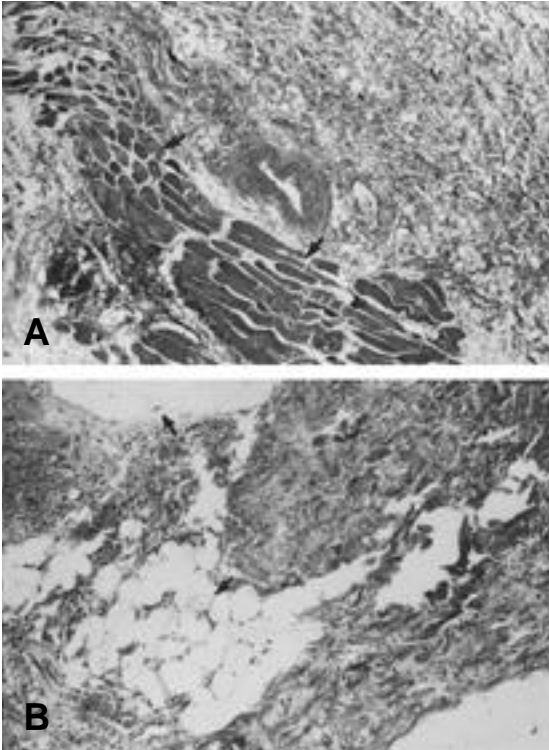
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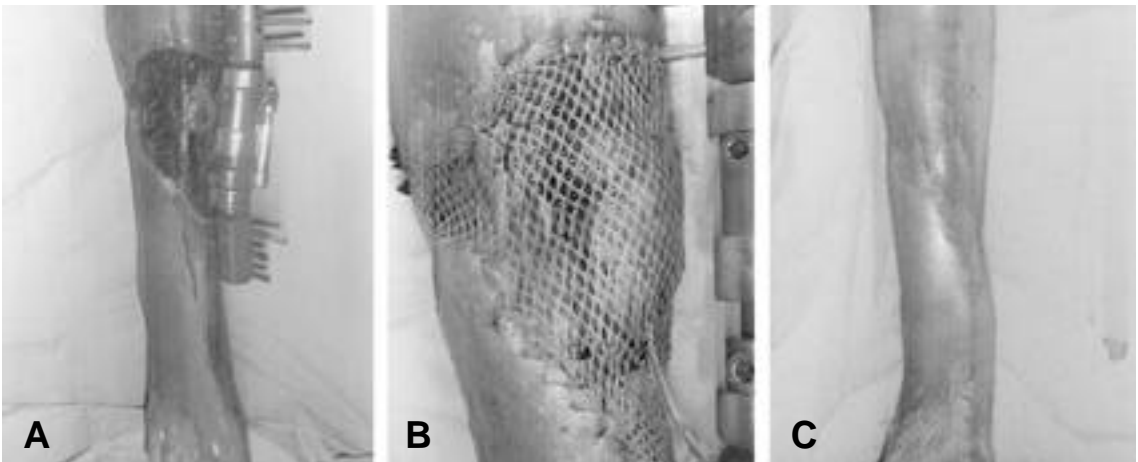
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(Fig. 4).

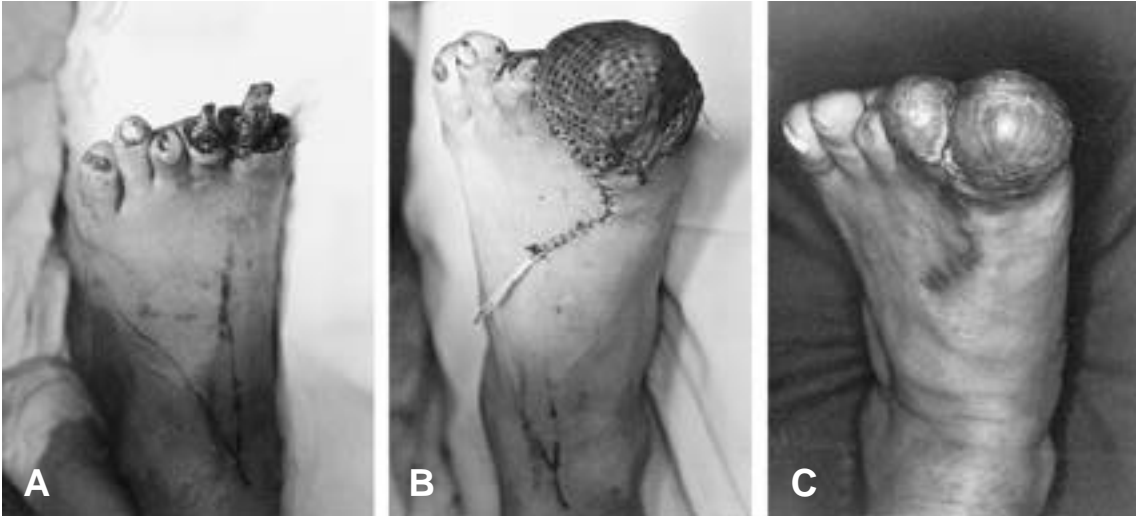
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**Fig. 6.** Histology of transected each flap (× 100).  
**A.** Photograph shows collagenous component and striation structure in temporoparietal fascia. Black arrow indicates striated muscle.  
**B.** Photograph shows rich fibroadipose tissue in sacular fascia. Note no muscle element. Black arrow indicates adipose cell.



**Fig. 7.** Reconstruction with a temporoparietal fascia free flap.  
**A.** Soft tissue defect of the right lower leg complicated by exposed tendon and bone.  
**B.** Immediate postoperative photograph of the skin-grafted temporoparietal fascia free flap.  
**C.** 5 month after placement. Note the good coverage of tendon, bone and good countour with this thin flap.



**Fig. 8.** Reconstruction with a scapular fascia free flap.

**A.** Preoperative photograph of left foot.

**B.** Immediate postoperative photograph of the skin-grafted scapular fascia free flap.

**C.** Good result 16 month postoperatively; stable wound healing is evident.

	Fox	Edgerton <sup>5)</sup>		Gilbert	Teot <sup>6)</sup>
			, Smith		
				7,10,11,13)	
Brent <sup>4,15)</sup> 가			가	가	,
가		2-4,8,12,14)			
					가
innominate fascia,			가		
					6,7,10)
가					가
					가
					2,4,18)
			(Table 2).		
			가		가
		18)			



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