The Search for the Ideal Thin Skin Flap: Superficial Circumflex Iliac Artery Perforator Flap—A Review of 210 Cases

Terence L. H. Goh, M.B.B.S., M.D.
Sung Woo Park, M.D.
Jae Young Cho, M.D.
Jong Woo Choi, M.D.
Joon Pio Hong, M.D., Ph.D., M.M.M.

Seoul, Republic of Korea

Background: The superficial circumflex iliac artery perforator flap is a thin skin flap that can be harvested reliably and quickly from the groin. It is ideal for single-stage resurfacing of cutaneous defects. The donor site heals well and is easily concealed. The authors clarify the anatomy, simplify the flap harvest technique, and outline the modifications to expand the applications of this flap.
Methods: Between January of 2011 and January of 2014, 210 superficial circumflex iliac artery perforator flaps were performed at Asan Medical Center. The flaps were used for head and neck reconstruction (n = 13), upper extremity reconstruction (n = 19), lower limb reconstruction (n = 176), and reconstruction in the trunk region (n = 2). All flaps were raised suprafascially using a free-style approach. The anatomy of the flap, the elevation technique, and the results of the reconstruction were assessed.
Results: The average flap size was 86 cm^2, ranging from 17.5 to 216 cm^2 (mean vertical width, 6.3 cm; mean transverse length, 13.5 cm). Total flap loss occurred in 10 flaps (4.8 percent). Two patients developed complications at the donor site. Debulking surgery was performed in five patients (2.4 percent). The average follow-up period was 400 days (range, 30 to 1690 days).
Conclusions: The superficial circumflex iliac artery perforator flap enables accurate resurfacing of moderate-size cutaneous defects. It is vascularly robust and versatile for use in different sites. This is the thinnest skin flap presently available and has the potential to become the new workhorse flap for resurfacing moderate-size skin defects. (*Plast. Reconstr. Surg.* 135: 592, 2015.)
CLINICAL QUESTION/LEVEL OF EVIDENCE: Therapeutic, IV.

The goals of reconstruction have progressed from filling a hole to providing improved function and appearance and also with the least donor-site morbidity. For resurfacing, a flap typically undergoes two stages: reconstruction and debulking. As we shift from the paradigm of the reconstructive ladder to the reconstructive elevator,[1] the entire reconstruction can be performed reliably in a single stage. Also, although the radial forearm flap provides a very thin skin paddle, it sacrifices a major artery to the hand, and the donor scar is unsightly. The anterolateral thigh is an ideal workhorse flap[2,3] for reconstruction of most cutaneous defects but requires secondary debulking procedures,[4,5] and the donor site may be conspicuous, especially for female patients. An ideal thin skin flap with a well-concealed donor site is now found in the superficial circumflex iliac artery perforator flap.

The groin, thought to be the ideal donor site,[6] was chosen by Daniel and Taylor for the first free flap.[7] The groin is well concealed, provides a moderate amount of thin skin, and has a good color match with the face. Despite these benefits, the prototype flap fell out of favor: it was raised

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subfascially, it was bulky, it was difficult to inset, the pedicle anatomy was variable in its course, the vena comitans was often too small, and donor-site lymphorrhea and wound dehiscence were problems. The introduction of the superficial circumflex iliac artery perforator flap by Koshima et al.[8] enabled the surgeon to raise a thin suprafascial flap from the groin. Despite the introduction of the superficial circumflex iliac artery perforator flap more than 10 years ago, there have only been 15 articles to date detailing its use. The objectives of this article are to clarify the anatomy of the superficial circumflex iliac artery perforator flap, simplify the flap harvest technique, and outline the technical modifications so that it can be used globally.

PATIENTS AND METHODS

We performed a retrospective review of superficial circumflex iliac artery perforator flaps in 210 consecutive patients operated on between June of 2009 and January of 2014 by a single senior surgeon. Clinical data were extracted from the patient flap database using a predesigned pro forma. All patients who underwent superficial circumflex iliac artery perforator flap reconstruction during the above-mentioned period with a follow-up of more than 30 days were included. The following were collected for every patient studied: age, sex, body mass index, American Society of Anesthesiologists class, comorbidity, pathologic situation, site of reconstruction, flap size, details regarding artery and veins, anastomosis details, revision rates, complications (partial, total flap loss, and donor site), and secondary debulking procedures.

Surgical Technique

Preoperative ultrasound Doppler is used to mark the potential recipient perforators or pedicle around the soft-tissue defect as described previously.[9] (**See Video, Supplemental Digital Content 1**, which demonstrates the superficial circumflex iliac artery perforator flap elevation technique, ***http://links.lww.com/PRS/B207***.) Before the commencement of the reconstruction, complete and thorough débridement is performed, extending to the bone when necessary. Bony fixation is performed before soft-tissue reconstruction. Recipient vessels are isolated first to confirm the patency and to estimate the length of the pedicle.

Preoperative Marking

A line is drawn from the inguinal crease to the anterior superior iliac spine, marking the topographic pathway of the perforator. An acoustic Doppler probe is used to locate and identify the perforators from the superficial circumflex iliac artery. Multiple perforators can be traced along this axis. The flap design is outlined to include as many perforators are feasible and also to center the flap toward the medial aspect of the groin. A pinch test is performed to confirm primary closure of the donor site. The maximum width of the flap that can be raised while permitting primary closure is 8 cm. The length of the flap can be extended beyond the anterior iliac spine or medially toward the buttock crease (Fig. 1).

Video. Supplemental Digital Content 1 demonstrates the superficial circumflex iliac artery perforator flap elevation technique, ***http://links.lww.com/PRS/B207***.

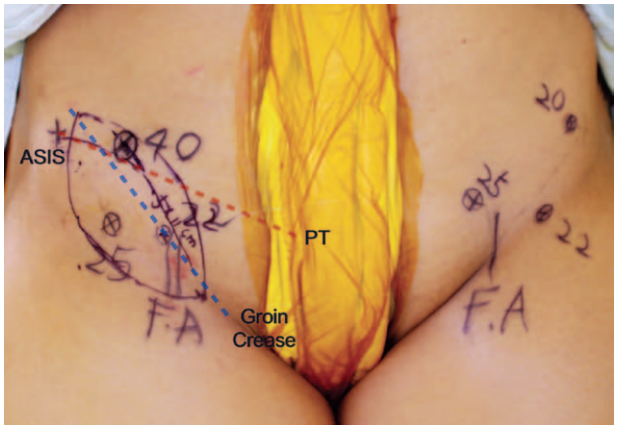

Fig. 1. Flap design. An imaginary line (*red line*) drawn from the pubic tubercle (*PT*) to the anterior superior iliac spine (*ASIS*) denotes the inguinal ligament. Above it lie the perforators originating from the superficial inferior epigastric artery, and below it lie the perforators originating from the superficial circumflex iliac artery. The axis (*blue line*) of the superficial circumflex iliac perforator flap runs in the direction from the groin crease toward the anterior superior iliac spine. By designing the skin paddle along this axis, the maximum number of perforators (average, 2.3) will be included in the flap along with the superficial vein.

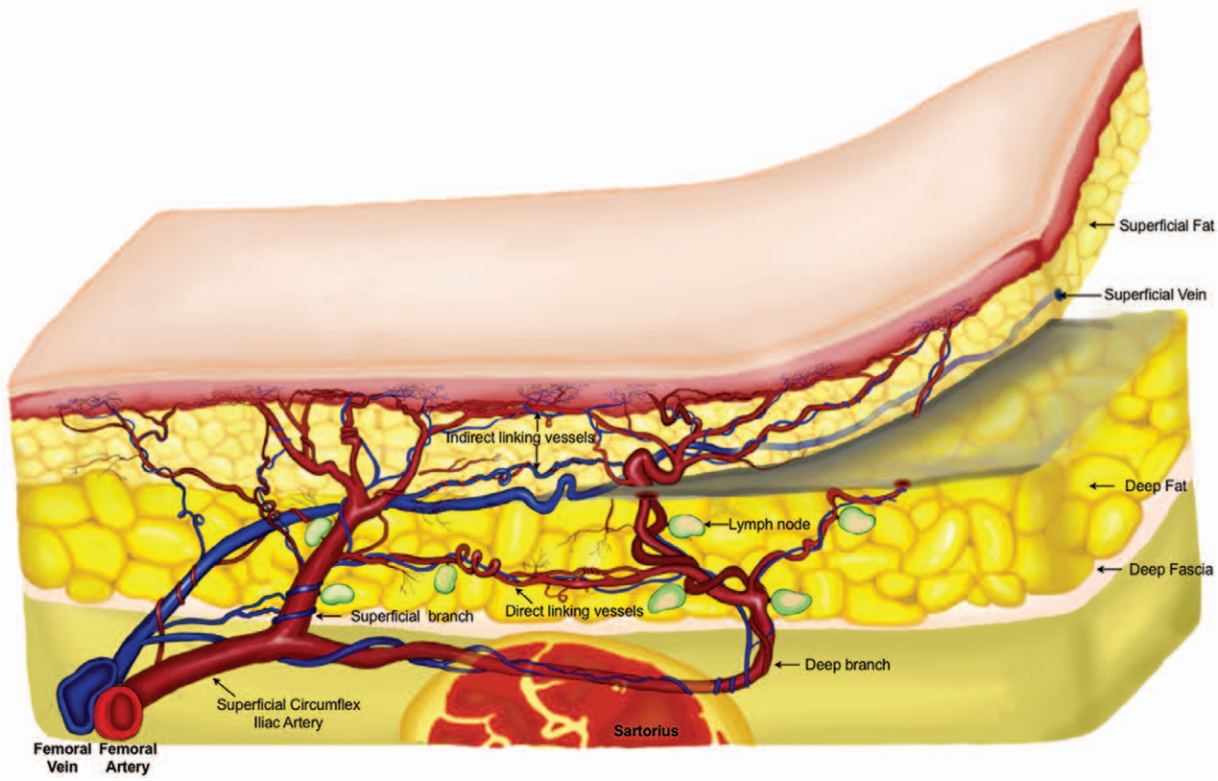

Fig. 2. Elevation of a superficial circumflex iliac artery perforator flap in the superficial plane. The flap is elevated at the level of the superficial fascia, preserving the deep fat, along with the lymphatics and the lymph nodes. The flap can be reliably based on the superficial branch 92 percent of the time, or the deep branch if the superficial branch is too small. The indirect linking vessels, which traverse the superficial fat, provide the perfusion in-between the perforators when the direct linking vessels are ligated. The superficial vein traverses the plane between the superficial and deep fat and is included in the flap for venous drainage.

Flap Harvest Using a Free-Style Approach

Required dimensions of the superficial circumflex iliac artery perforator flap are outlined according to the defect.[10] The flap is elevated along the inferior and lateral borders under 4× loupe magnification. The dissection plane, which is identified most clearly inferolaterally, lies above the Scarpa fascia, in-between the superficial and deep fat (Figs. 2 and 3). There is a distinct white fascial layer separating the smaller fat lobules from the deeper, larger fat lobules. This is much clearer in a patient with a higher body mass index. Superficial lymphatics and lymph nodes are spared, as they are found in the deeper adipose tissue. A bloodless field, essential so that staining of the tissue does not interfere with the identification of the perforators, is achieved through diathermy needle dissection. Elevation progresses from lateral to medial, and the deep (and more lateral) branch from the superficial circumflex iliac artery perforator is identified first followed by the superficial (and more medial) branch (Fig. 4). Perforators are skeletonized toward the deep fascia and examined for suitability. The deep branch is clamped to assess for sufficiency of the corresponding superficial branches. If the perfusion of the flap continues

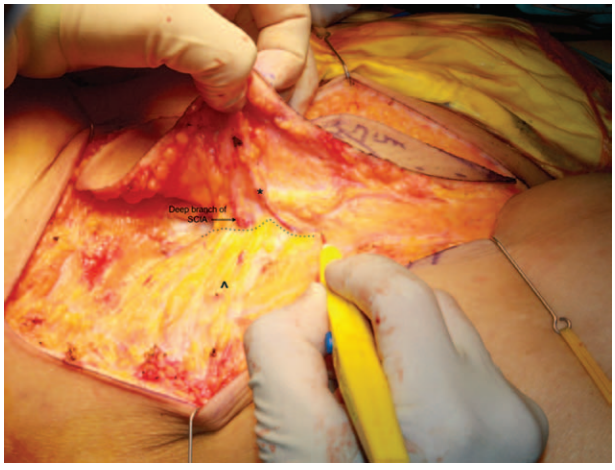

Fig. 3. Elevation of a superficial circumflex iliac artery perforator flap in the superficial plane. The *dotted line* illustrates the plane between the superficial and deep fat. As the flap is raised from lateral to medial, the deep branch of the superficial circumflex iliac artery will come into view. In most cases, a superficial vein (*asterisk*) is also present (88 percent in this series) and can be included as a venous outflow to drain the flap.

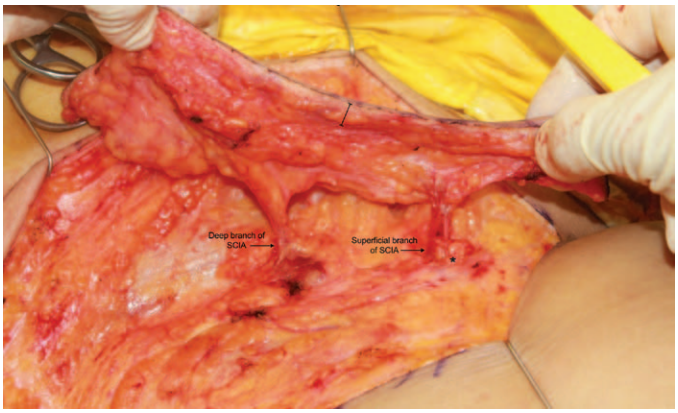

Fig. 4. Perforators of the superficial circumflex iliac artery perforator flap. The deep and superficial branches of the superficial circumflex iliac artery (*SCIA*) supply the flap. Either of these branches is vascularly robust to supply the flap independently. The superficial vein (*asterisk*) drains the flap and courses near the superficial branch of the superficial circumflex iliac artery. Also note that elevating the flap in a supra-Scarpa plane enables us to harvest a thin skin flap; in this case, the flap is 5 mm thick. By dissecting the superficial branch of the superficial circumflex iliac artery perforator beneath the deep fascia, a longer pedicle, up to 7 cm, can be obtained. Consequently, the vessels are also of a larger diameter, as the dissection proceeds closer to the superficial circumflex iliac artery source vessel. Note that the superficial vein travels separately but close to the superficial branch of the superficial circumflex iliac artery.

to be sufficient, the deep branch is ligated and the flap is raised on the superficial branch. Pedicle dissection is performed retrogradely toward the superficial circumflex iliac artery. The deep fascia can be incised to obtain a longer pedicle and larger vessel diameter. A superficial vein running from the anterior superior iliac spine toward the pubis is normally identified and this is preserved. It is often that the accompanying veins drain into the superficial vein. In cases where there is a small or absent superficial vein, the vena comitans is usually of a larger caliber. In cases where the donor vessels are small, dissection is performed under the microscope. The average time for flap harvest is 45 minutes (range, 30 to 60 minutes).

Donor-Site Management

The superficial fascia layer is plicated together with absorbable 2-0 sutures before the dermis and skin sutures are placed. This is important, to obliterate the dead space and prevent seroma formation. Closure is performed over one Jackson-Pratt drain. If the flap width exceeds 8 cm or the closure is tight, the groin is flexed to 45 degrees for 5 days to reduce tension on the wound.

Postoperative Care

A postoperative vasodilator [10 μg of lipo-prostaglandin E_1 (Eglandin; Welfide, Seoul, Republic of Korea)] mixed in 5% dextrose is infused over 4 hours for 5 days. Low-molecular-weight heparin (Fraxiparin; Sanofi-Aventis, Paris, France), 3800 IU when required, is injected subcutaneously for 5 days. For lower extremity cases, graduated pressure garments (30 to 60 mmHg) are applied from day 5 to 7 to reduce edema and to mold the flap. This also enables early ambulation by day 7 to day 10. Upper extremity cases and head and neck cases are allowed to ambulate on postoperative day 1. Patients are discharged from the hospital within 10 days unless there are other medical problems.

RESULTS

Demographics

There were 118 male and 92 female patients. Average age at the time of surgery was 44.8 years (range, 4 to 80 years). Average body mass index was 23.8 kg/m^2 (range, 16.5 to 32.6 kg/m^2). Mean follow-up was 400 days (range, 30 to 1690 days).

American Society of Anesthesiologists physical status was as follows: class 1, 107 patients; class 2, 67 patients, and class 3, 36 patients. Comorbidities included hypertension (37.1 percent), ischemic heart disease (3.3 percent), diabetes mellitus (25.2 percent), peripheral vascular disease (4.3 percent), renal failure (1.9 percent), and active smoking (12.6 percent) (Table 1).

Table 1. Patient Demographics, Comorbidities, and Flap Characteristics

	Value (%)
Patient demographics	
Age, yr	
Mean	44.8
Range	4–80
Follow-up, days	
Mean	400
Range	30–1690
Sex	
Male	118 (56.2)
Female	92 (43.8)
BMI	
<25 kg/m^2	142 (67.6)
>25 kg/m^2	68 (32.4)
Comorbidities	
ASA class	
1	107 (51.0)
2	67 (31.9)
3	36 (17.1)
Hypertension	78 (37.1)
Ischemic heart disease	7 (3.3)
Type 2 DM	53 (25.2)
Type 2 DM on insulin	29 (13.8)
PVD	9 (4.3)
Renal failure	4 (1.9)
Smoker	27 (12.9)
Flap characteristics	
Flap dimensions	
Length, cm	5.0–25.0
Width, cm	3.5–12.0
Area, cm^2	17.5–216
Thickness, mm	
Mean	5.0
Range	3–12
Perforator characteristics	
No. of perforators	
Mean	2.3
Range	1–3
Pedicle length, cm	
Mean	5.0
Range	2.5–7.0
Diameter of artery, mm	
Mean	0.7
Range	0.4–1.2
Artery	
Superficial branch	193 (91.9)
Deep branch	17 (8.1)
Vein	
One vein	144 (68.6)
Superficial vein	120 (57.1)
Venae comitantes	24 (11.4)
Flap loss	7/144 (4.9)
Two veins	66 (31.4)
Flap loss	3/66 (4.5)

BMI, body mass index; ASA, American Society of Anesthesiologists; DM, diabetes mellitus; PVD, peripheral vascular disease.

Use of the 210 superficial circumflex iliac artery perforator flaps was as follows: 13 for head and neck reconstruction, 19 for upper extremity reconstruction, 176 for lower limb reconstruction, and two for trunk reconstruction. The pathologic conditions causing the cutaneous defects were varied, ranging from release of scar contractures (16.7 percent), to cancer extirpation (31.4 percent), to trauma (15.7 percent) and infection (22.4 percent), including diabetic feet (19.5 percent) and chronic osteomyelitis (9.0 percent) (Table 2).

Flap Design and Anastomotic Details

The width of the flap ranged from 3.5 to 12.0 cm. The length of the flap ranged from 5.0 to 25.0 cm. The average flap size was 86.3 cm^2 (range, 17.5 to 216 cm^2). The average flap thickness was 5 mm (range, 3 to 7 mm). The length of the pedicle of the flap averaged 5.0 cm (range, 2.5 to 7.0 cm). The size of the artery was approximately 0.7 mm (range, 0.4 to 1.2 mm) (Table 1).

The average number of perforators per flap was 2.3 (range, one to three). One hundred ninety-three flaps (91.9 percent) were based on the superficial branch of the superficial circumflex iliac artery, and 17 flaps (8.1 percent) were based on the deep branch of the superficial circumflex iliac artery. In 66 flaps (31.4 percent), two venous anastomoses were performed; and in 144 flaps (68.6 percent), one venous anastomosis was performed. There was no difference in the flap loss rates between using one or two veins (4.9 percent versus 4.5 percent).

Flap Success

In this series of 210 flaps, 21 of the cases (10.0 percent) underwent revision surgery. Eight were caused by arterial thrombosis, four were caused by venous thrombosis, three were caused by a combination of arterial and venous thrombosis, four were caused by hematoma formation, and two were negative explorations. A total of 15 flaps (71.4 percent) were salvaged. Six flaps were lost despite revision.

Ten of 210 flaps were lost, giving a success rate of 95.2 percent. Of the 10 flaps, five were lost early, mainly resulting from an arterial cause (80 percent), and were successfully reconstructed with a second free flap. The remaining five flaps were lost during the follow-up period as follows: four from venous congestion and one from trauma to the flap because of poor self-care. Three cases required a second flap and two underwent skin grafting. Seven patients had partial flap loss, of

Table 2. Indications and Anatomical Locations of Superficial Circumflex Iliac Artery Perforator Flap Reconstruction

	Indication for Reconstruction						
Anatomical Location	Tumor	Trauma	Infection	DM Foot*	Chronic Osteomyelitis	Others	Total
Head and neck	9	2	0	0	0	2	13
Upper extremity	11	4	1	0	0	3	19
Lower extremity	54	27	46	41	19	30	176
Others	2	0	0	0	0	0	2
Total no. (%)	76 (36.2)	33 (15.7)	47 (22.4)	41 (19.5)	19 (9.0)	35 (16.7)	210

DM, diabetes mellitus.
*A subset of the number of infections.

whom one required secondary suturing, four required skin grafting, and one required a local flap. In one patient, the necrosis of the leg progressed and below-knee amputation was required (Table 3).

Donor Site

All donor sites were closed primarily. One patient had lymphorrhea and another patient had a seroma, which required drainage.

Debulking

Five patients (2.4 percent) required postoperative flap debulking surgery to achieve the ideal contour. Their body mass indices were greater than 26 kg/m^2. All patients were satisfied with the postoperative contour.

CASE REPORTS

Case 1

A 44-year-old man underwent radical débridement of his tibia and overlying skin for treatment of Cierny-Mader grade III chronic osteomyelitis. The resultant skin defect of 8 × 20 cm was covered with a superficial circumflex iliac artery perforator flap based on the deep branch of the superficial circumflex iliac artery and superficial vein. Microvascular anastomosis was performed to the branches of the anterior tibial artery in an end-to-end fashion for both artery (7 mm) and vein. The donor site was closed primarily and the scar is acceptable and well hidden under plain clothes. The patient at 12 months had good shin contour and did not need debulking procedures. The thinness of the flap can be observed by means of pinching (Fig. 5).

Table 3. Results and Complications of Superficial Circumflex Iliac Artery Perforator Flap Reconstruction

Complications	No. (%)
Recipient site	
Complete flap loss	10 (4.8)
Early loss	5 (2.4)
Late flap (>POD 10)	5 (2.4)
Partial flap loss	14 (6.7)
Secondary procedures	12 (5.7)
Primary closure	1 (0.5)
Split skin graft	4 (1.9)
Amputation	1 (0.5)
Second free flap	8 (3.8)
Debulking surgery	5 (2.4)
Donor site	
Donor-site complications	2 (1.0)
Wound dehiscence	1 (0.5)
Seroma	1 (0.5)

POD, postoperative day.

Case 2

A 65-year-old woman with a diabetic foot affecting the first metatarsal underwent radical débridement and reconstruction with a 6 × 12-cm superficial circumflex iliac artery perforator flap based on the superficial branch of the superficial circumflex artery and both venae comitantes and the superficial vein. The pedicle length was 5 cm. End-to-end microvascular anastomosis was performed to the branches of the dorsalis pedis and two veins. The patient at 12 months did not require any debulking procedures. She was able to resume use of footwear (Fig. 6).

Case 3

A 40-year-old man with squamous cell carcinoma of the right hemitongue underwent resection and reconstruction with a 6 × 12-cm superficial circumflex iliac artery perforator flap. The patient at 3 months was able to speak intelligibly using the well-contoured tongue and resume a normal diet (Fig. 7).

Case 4

A 40-year-old woman with scar contracture over the left first web space after trauma visited the clinic and underwent scar release and reconstruction with a superficial circumflex iliac artery perforator flap. The patient regained the pinching function after achieving adequate web space reconstruction. The patient at 18 months shows good contour without the need for debulking or additional procedures.

DISCUSSION

The superficial circumflex iliac artery perforator flap is versatile and can be used globally. It provides a very thin, pliable, moderate-size skin paddle. This is very useful for reconstructing defects over the dorsum of the foot or around the toes and web space, which do not tolerate bulkiness[11,12]; cutaneous defects of the upper limb where a bulky flap may be unsightly or interfere with hand function; and for head and neck defects, such as resurfacing

Fig. 5. Case 1. Débridement of chronic osteomyelitis of the tibia and reconstruction with a superficial circumflex iliac artery perforator flap. (*Above, left*) Chronic right tibial osteomyelitis with skin ulceration is noted. (*Above, right*) Photograph obtained following débridement shows a large skin defect exposing the underlying tibia. (*Below*) A well-healed skin flap over the right tibia with good contour at 1 year is shown. Note how thin the flap is by pinching the pretibial region.

the extra-auditory meatus or providing a good color match in the face.

Clarifying the Variable Anatomy of the Superficial Circumflex Iliac Artery Perforator Flap

All flaps were elevated above the Scarpa fascia according to our modification,[13] thus preserving the deep fat, which contains the lymphatics, lymph nodes, and cutaneous nerves (Fig. 1). This approach has two major advantages. First, elevating a flap above the Scarpa fascia allows safe and expeditious harvest of a thin flap (even in patients with a body mass index >25 kg/m^2). The need for secondary debulking procedures was markedly reduced.[14,15] The superficial plane has been shown to be a reliable elevation plane to raise a safe and vascularly robust flap.[12] According to the perforasome concept described by Saint-Cyr et al.,[16] the skin derives its perfusion from direct linking vessels and also indirect linking vessels located just beneath the subdermal plexus. On the basis of this knowledge, a large, thin flap can be raised on a single perforator if the indirect linking vessels are preserved (Figs. 2 and 3). It is important to image the perforators on the groin with a Doppler probe and to include as many perforators in the flap as possible. Indirect linking vessels tend to traverse radially along the axis from the anterior superior iliac spine to the pubis.[17] By elevating the superficial circumflex iliac artery perforator flap at this plane, an average of 2.3 perforators can be included in the flap. Preservation of deep structures and the lymph nodes prevents lymphorrhea and wound dehiscence.

The superficial circumflex iliac artery perforator flap is nourished by the superficial and deep branches of the superficial circumflex iliac artery.[8,13,18] The deep branch runs more laterally

Fig. 6. Case 2. Reconstruction for diabetic foot infection with a superficial circumflex iliac artery perforator flap. (*Above*, *left*) Patient with diabetic foot infection affecting the first metatarsal is shown. (*Above*, *right*) Supermicrosurgery anastomosis of one artery and two veins (the artery is approximately 0.5 mm in diameter). (*Below*, *left*) Well-healed and easily concealed donor site at 1 year. (*Below*, *right*) Well-healed superficial circumflex iliac artery perforator flap reconstruction over the dorsum of the right foot without debulking surgery at 1 year. The patient is able to resume footwear use without any problems.

Fig. 7. Case 3. Patient with squamous cell carcinoma of the tongue after hemiglossectomy (*left*) and reconstruction with a superficial circumflex iliac artery perforator flap (*right*). He is able to speak intelligibly and can tolerate a normal diet.

and pierces the sartorius muscle and fascia before supplying the skin, whereas the superficial branch runs medially and has a direct septocutaneous course. In 92 percent of the flaps raised, both branches are equally robust to supply the flap independently. In such cases, we choose the septocutaneous superficial branch to avoid the need for tedious intramuscular dissection. We have noted that in 8 percent of the flaps elevated, the superficial branch was small and we used the deep branch, which is inversely larger instead. In our series, the largest flap was 8.5 × 25 cm based on the superficial branch of the superficial circumflex iliac artery.

As reported by several authors,[8,18] the concomitant vein accompanying the pedicle tends to be small and inadequate for anastomosis. We concur with this finding and have found that the vena comitans was reliable for anastomosis in only 11.7 percent of cases. In contrast, the superficial vein was used in 88.3 percent cases; in 32 percent of cases, two veins (one from the venae comitantes and one from the superficial system) were anastomosed. The superficial vein travels parallel to the axis of the superficial circumflex iliac artery system and can easily be traced proximally to a length adequate for anastomosis. In our early cases, we routinely used two veins to drain the flap; however, once we were confident of the anatomy, the flap could be reliably drained by a single vein. Moreover, as we adopted the supermicrosurgery technique of using a perforator as a donor end-to-side anastomosis, there was less arterial inflow to the flap in comparison with traditional end-to-end anastomosis to a major artery, which reduced venous outflow requirements.

Technical Modifications and Expanding the Applications of the Superficial Circumflex Iliac Artery Perforator Flap

Current literature shows that application of this flap is limited to defects where the recipient vessels are superficially located, such as the foot,[8,13] genital area,[19] or upper limb.[8] The pedicle of the superficial circumflex iliac artery perforator flap is 5 cm and thus would require vascular grafts if we were to attempt to reconstruct defects in the middle or upper third of the leg or in the head and neck region. We overcome this disadvantage with the following measures: an extra 1 to 2 cm of pedicle length can be obtained by dissecting the vessel beyond the deep fascia, which also provides a pedicle of larger diameter; and using the supermicrosurgery concept of anastomosing the perforator-to-perforator or distal branches of the artery in the periphery of the defect[9] helps to economize the vessel length required and ensures less vessel lumen discrepancy. The only prerequisite is that the recipient vessel must have a strong pulse and a positive spurt test. The merits of this approach are that it minimizes the sacrifice of a major vessel, which is useful in salvage of a limb with only one remaining major vessel and in diabetic patients where the perforators are often the only vessels spared from the macrovascular disease. Every flap has its pros and cons, and using such modifications allows us to maximize the potential of the superficial circumflex iliac artery perforator flap (Table 4).

Using this approach of flap elevation and recipient vessel selection, we are able to reconstruct a myriad of defects, even in patients with challenging abnormalities. Ten flaps were lost in this series of 210 cases, giving a success rate of 95.2 percent. Twenty-one cases (10.0 percent) underwent reexploration, of which there were more cases of arterial insufficiency versus venous congestion. This highlights the need for special maneuvers during the handing of the delicate perforators. Constant irrigation of the perforator to prevent hydration, meticulous handling under microscope magnification, and adequate postoperative hydration are essential for operative success. Of the 21 cases, 15 were salvaged, giving a salvaged rate of 71.4 percent, which is comparable to the rate for conventional axial flaps.[20]

The challenges for using the superficial circumflex iliac artery perforator flap are the initial learning curve of identifying the superficial fascial plane and the ability to dissect and isolate the perforators. For surgeons starting to work with this flap, patient selection should begin with foot and arm defects, where there are superficially located recipient artery and veins, before moving on to the head and neck area or the leg where supermicrosurgery techniques need to be used. Once these skills are mastered, the superficial circumflex iliac artery perforator flap becomes the workhorse for reconstructing moderate-size defects.

Table 4. Pros and Cons of the Superficial Circumflex Iliac Artery Perforator Flap

Pros
Well concealed donor site
Thin and pliable skin flap (allows single-stage resurfacing)
Septocutaneous pedicle
Expedient harvest
Can be hairless
Cons
Smaller vessel lumen
Moderate size skin paddle
Medium length pedicle
Supermicrosurgery technique required for certain defects

CONCLUSIONS

The superficial circumflex iliac artery perforator flap has success rates similar to those of conventional flaps, with reduced morbidity and better donor scars. It can be reliably raised in the supra-Scarpa plane to provide an ultrathin flap for accurate resurfacing of moderate-size defects in all regions of the body. The superficial circumflex iliac artery perforator flap is the thinnest skin flap presently available and has the potential to become the new workhorse flap for resurfacing skin defects.

Joon Pio Hong, M.D., Ph.D., M.M.M.
Department of Plastic Surgery
Asan Medical Center
University of Ulsan Medical College
43gil 88 Olympic-ro Songpa-gu
Seoul 138-736, Republic of Korea
joonphong@amc.seoul.kr

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