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**경피적 혈관 성형술 이후
천층회선장골동맥 천공지 유리피판
(SCIP)의 혈관경 손상에 대한 사례군 연구**
(Vascular Pedicle Injury of the Superficial Circumflex Iliac Artery Perforator (SCIP) Free Flap Following Percutaneous Transluminal Angioplasty: A Case Series)



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Purpose: To retrospectively analyze four cases of flap failure due to vascular pedicle injury during reconstruction with a Superficial Circumflex Iliac Artery Perforator (SCIP) free flap in patients with a history of percutaneous transluminal angioplasty (PTA), and to evaluate the impact of prior endovascular intervention on donor vessel reliability.

Methods: We reviewed four patients who had previously undergone angioplasty or angiography of the lower extremities or major vessels and subsequently underwent reconstruction using a SCIP free flap. Preoperative ultrasonography assessed the course and patency of the superficial branch of the superficial circumflex iliac artery (SCIA). Intraoperative findings regarding the vascular pedicle and surrounding tissues were analyzed retrospectively.



Fig. 1 Intraoperative view of SCIP flap elevation. The perforator (yellow arrow) was identified during dissection.

Results: Although preoperative ultrasonography suggested that the superficial branch of the SCIA was preserved, severe fibrosis and adhesions were observed around the origin of the vascular pedicle during flap dissection in all four cases. The main branch of the superficial SCIA was occluded, and distal perfusion was maintained through collateral flow from adjacent branches or the deep branch of the SCIA. These findings led to vascular pedicle compromise and flap failure.

Conclusion: Prior percutaneous transluminal angioplasty may reduce donor vessel stability due to perivascular injury and fibrosis. Even with preoperative ultrasonography, false-positive assessments of vessel patency may occur. Therefore, meticulous preoperative evaluation with ultrasonography and/or CT angiography is essential in patients with a history of endovascular intervention, and alternative donor site selection or modification of surgical strategy should be considered. These findings underscore the importance of careful risk stratification in microsurgical planning.



Fig. 2 Intraoperative gross view of the elevated SCIP flap before pedicle division (left) and indocyanine green angiography demonstrating absent perfusion to the flap (right).

Case	Age/Sex	Defect etiology	Preoperative vascular intervention (Approach)	Defect	Flap Side	Flap size	Definitive reconstruction
1	F/21	Postoperative wound necrosis after triple arthrodesis for congenital clubfoot	DPA angioplasty + posterior tibial artery -lateral plantar bypass (bilateral femoral)	Lt. foot dorsum & ankle	Rt.	18 × 7 cm	ALT free flap
2	M/66	Diabetic foot ulcer	Peripheral PTA (Lt. femoral)	Lt. foot, 4th-5th metatarsal area	Lt.	15 × 8 cm	Fillet flap
3	F/60	Diabetic hand ulcer	CAG + peripheral PTA (Lt. femoral)	Lt. hand, 3rd-5th metacarpal area	Lt.	15 × 8 cm	Fillet flap

Table 1. Clinical characteristics and reconstructive details of three cases.

Abbreviations: **ALT**, anterolateral thigh; **CAG**, coronary angiography; **PTA**, percutaneous transluminal angioplasty.