

No. 1.

Reverse Dorsal Digital Island Flap을 이용한 수지부 결손의 재건

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기계적 손상 및 물리적 외력에 발생하는 수지 손상 중에서 피부 및 연부조직 결손이 동반되었을 때 이러한 수부 손상의 만족스런 재건을 위해서는 견고한 연부조직의 제공과 수지의 정상 길이를 가급적 유지하고 손상된 수지부의 감각 회복 및 내구성 복원 등, 그 수지부의 기능 및 미용적인 면에서 만족스러워야 하는데 재건 방법으로 local flap, regional flap, distant flap, free flap 등이 지금까지 이용되어 왔다.

이에 본 교실에서는 수지부의 해부학적 특성, 즉 volar digital artery의 dorsal branches의 풍부한 arterial network에 base를 두고 수지부의 dorsal, midl acteral, and tip portion의 연부조직 결손을 main volar digital artery의 손상을 피하고, 그 회복이 빠르며 재건 후 수지부의 기능적, 미용적 측면에서 만족스러운 결과를 얻을 수 있는 Reverse dorsal digital island flap을 시행하였는데 이 Reverse dorsal digital island flap의 장점으로 재건에 있어서 그 동안 많이 사용되어 왔지만 환자에게 장기간 불편을 초래하는 distant flap을 피할 수 있으며 homodigital flap으로 손상된 수지의 immobilization이 필요치 않으며 one-step procedure로 다양한 각도의 flap rotation이 가능하고 또한 volar digital artery를 보존하고 빠른 회복을 보이는 재건이 가능하다는 점 등이다.

본 조선대학교 성형외과학 교실에서는 1995년 3월부터 1995년 9월까지 수지 손상 및 연부조직 결손 환자 7례에서 Reverse dorsal digital island flap을 시행하여 만족할 만한 결과를 얻었기에 보고하는 바이다.

No. 2.

수부 및 수지재건을 위한 역혈행성 도서형 감각피판술

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서론

Bostwick은 1976년 처음으로 전측두동맥 역혈행성 도서형 피판술을 발표하였고, 역혈행성 피판의 정맥유입에 대하여 Lin 등이 1984년 발표한 이래로 다양한 역혈행성 피판들이 소개되었다. 저자들은 역혈행성 피판과 신경재건을 하였던 감각피판의 경험을 소개하고자 한다.

재료 및 방법

지난 5년간 수부 및 수지의 연부조직 결손환자 39례를 역혈행성 도서형 피판으로 재건하였으며, 각각 시동맥피판 25례, 배측 중수골동맥피판 3례, 요측 전완피판 3례, 척측 전완피판 2례와 6례의 후골간동맥피판이었고, 이중 25례는 감각피판으로 재건하였다.

결과

모든 피판은 특별한 합병증없이 결손부위에 재건되었으며, 수지감각피판으로 재건되었던 부위는 임상적인

Introduction

The skin flap is one of the most important concerns in plastic surgery. We have tried, in animal experiments and clinical experience, the regional arterial infusion of PGE1 with the aim of increasing the survival area of a skin flap, and have confirmed an excellent effect. In the present experiment, we confirmed there is a direct action on microcirculation of a skin flap.

Method

A large 12×20cm island skin flap was prepared on rabbit abdomens with a pedicle of superficial vessels. An intraarterial infusion catheter was inserted into the left femoral artery, and its tip was retained at the bifurcation of the abdominal aorta. This flap usually has a survival area of about 60%, but regional arterial infusion of PGE1 can increase this to about 90%(Ann. Plasts. Surg., 30:154, 1993).

The skin flaps were examined with the following points in mind. (1) Blood flow : 24 hours after preparation of a skin flap, the presumed area of survival was delineated by a fluorescein luminescence test. The blood flow before and after the administration of PGE1 was measured by laser Doppler blood flowmeter. (2) Microvascular diameter : The skin flap is so thin the microvascular system can be observed biomicroscopically. Microscopic images were successively recorded by video and the vascular diameter measured by the image-splitter method before and after the administration of PGE1. (3) Microvascular blood flow velocity : Blood flow velocity of the arterioles and venules was measured at 1,000 frames/sec using a high-speed video system(Kodak Ektapro, 1,000). (4) Red blood cells : The number of red blood cells passing through a capillary was counted for 30 seconds before and after the administration of PGE1 using a high-speed video system.

Results

(1) The relative blood flow increased concentration-dependently. The rate of increase was greatest at the borderline level of skin flap necrosis. (2) Arterioles showed distinct dilation while venules did not. Arteriole diameter increased concentration-dependently under arterial infusion of PGE1, and only slightly under intravenous injection. (3) Blood flow velocity in both arterioles and venules showed concentration-dependent increases 10 minutes after the commencement of PGE1 arterial infusion, but only slight increase under intravenous injection. (4) There was a great increase in the number of red cells passing through a capillary 10 minutes after following the start of PGE1 arterial infusion, but only a slight increase under intravenous infusion.

Discussion

The increase in flap survival area due to the regional infusion of PGE1 has been suggested to be ascribable to the increase in intra-skin flap blood flow, especially at the borderline of necrosis. This blood flow increase proved to be due to dilation of the arterioles, the increase in blood flow increase proved to be due to dilation of the arterioles, the increase in blood flow velocity resulting from antithrombotic action, and improved red blood cell deformation. Arterial infusion is far more effective in generating a series of these actions than intravenous infusion.

No. 1.

Reconstruction of Defects of the Digits by Using Reverse Dorsal Digital Island Flap

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Among the digital injuries caused by mechanical damage and physical forces, when skin and soft tissue defects and accompanied, the functional and cosmetic aspects of digits must be satisfactory by offering solid tissue maintaining normal length of digits and restoration of sensibility of damaged digits and durability for the satisfactory reconstruction of digits damage. Local

flap, regional flap, distant flap and free flap have used as the ways of reconstruction. So we reconstructed Reverse digital island flap in which we could avoid the damage of main volar digital artery, recovery was fast and we could get a satisfactory result.

In the functional and cosmetic aspects of reconstruction to recovery the loss of soft tissue of dorsal, midlateral and tip portion of digits on the bases of anatomical characteristics of digits, the abundant arterial network of dorsal branches of volar digital artery.

The Reverse dorsal digital island flap has several merits : it can avoid distant flap that causes discomforts to patients for a long term, it doesn't need immobilization of deranged digits caused by homodigital flap, just one-step procedure makes various angle rotation possible, it can preserve volar digital artery and quick recovery possible.

We had reconstructed Reverse dorsal digital island flap to the seven patients who had digits soft tissue defects from March, 1995 to September, 1995 and got satisfactory results. So we make a report.

Key Words : Reverse dorsal digital island flap, Soft tissue defects of the digits.

No. 2.

Reverse Flow Island Flaps in the Hand and Finger

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Introduction

In 1976, Bostwick reported the reverse flow temporal artery island flap, Lin described venous drainage of reverse flow flap in 1984, then the various reverse flaps of upper and lower extremities were reported, we present our experience flow flap in the hand and finger.

Material and method

Over the past 5 years, 39 cases of hand and finger soft tissue defects were treated using reverse flow island flaps; 25 digital flaps, 3 dorsal metacarpal flaps, 3 radial forearm flaps, 2 ulna forearm flaps, 6 posterior interosseal flaps. 25 cases of 39 cases were sensated flaps; 10 digital sensated flaps, 1 radial forearm flap, 1 ulna forearm flap sensated posterior interosseal flaps.

Results

All the flaps survived without any complications, the excellent sensory recovery was recorded in sensated digital island flaps (s2pd:6.4mm) compared to poor sensory recovery in nonsensated flaps (s2pd:9.2mm). The shortcoming of reverse flaps is that one pedicle artery has to be sacrificed, however the postoperative circulatory disturbance of hand was not observed clinically in any of our cases. We evaluated 13 reconstructed hand with thermography, the results revealed no incidence of circulatory disturbance.

Conclusion

The sensated reverse flow island flap in the hand and finger are convenient and safe procedure for reconstruction.

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