No. 15

측두두정근막 유리피판을 이용한 하지 연부조직결손의 재건

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하지부의 다양한 결손을 재건하는데 있어서 이전부터 여러 형태의 피판들이 사용되어 왔으나, 대부분의 피판술은 그 적응이 제한되어 있고 피판이 너무 두꺼우며 공여부에 2차적으로 보기 흉한 반흔을 남기는 단점들을 가지고 있다.

측두두정근막(표재성측두근막)피판은 1976년 Fox와 Edgerton에 의해 처음 소개된 후로 두경부의 다양한 결손에 유경피판 및 복합피판으로 사용되어져 왔고, 1979년 Smith와 Brent가 근막피판을 유리피판으로 처음 사용한 이래 공여부에 거의 반흔을 남기지 않으면서 결손부위를 재건하는데 있어 아주 얇게 피복할 수 있는 장점들을 가지고 있어 사지부 결손 재건에 원격 유리피판으로 사용되고 있다.

이 피판은 1) 두께가 매우 얇아 미용적으로 훌륭한 결과를 보이며, 2) 얇은 피판으로 노출된 골, 건, 신경 및 혈관 등을 피복할 수 있고, 3) 풍부한 혈관망은 배형성화(saucerized)된 골이나 연골, 건 및 부가(overlying) 이식피부에 영양을 공급할 수 있고, 4) 수혜부의 만성염증을 치유시키거나 수혜부의 바닥면에 신생혈관조성을 유도할 수 있으며, 5) 점성의 활주면은 건의 편기운동(excursion)시 마찰을 줄여줄 수 있는 등 여러 가지 장점들을 지니고 있다.

이에 저자들은 하지부 결손환자 15명에 측두두정근막을 이용한 유리피판을 이용하여 결손부 재건에 만족할 만한 결과를 얻었기에 문헌고찰과 함께 보고하는 바이다.

No. 16

혈관부착 근위비골 성장판 이식시 공여부 수술의 새로운 술식

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장관골의 성장판 손상인 관절손상등으로 성장기의 아동에 있어 정상적인 골격성장에 장애가 있는 경우에는 치료가 상당히 힘들기 때문에 여러 가지 치료법들이 개발되어 사용되고 있으나 만족할 만한 방법은 거의 없는 실정이다. 그 방법들 중에 미세수술의 발달에 힘입어 새로히 시도되고 있는 근위 비골골단 및 성장판이 소아의 성장판 기능이상의 치료에 이용될 경우 미세 재건수술의 공여부를 채취하는 새로운 수술방법을 제시하고자 한다. 4년이상 추시 가능하였던 성장판 이식술에서의 결과를 이식된 성장판의 성장능력을 공여부 동맥의 종류에 따라 분석하였을 때 Anterior tibial recurrent artery를 포함하고 있는 전경골동맥(Anterior tibial artery)이 가장 우수한 결과를 보인다고 한다. 그러나 이 Anterior tibial recurrent artery는 전경골 동맥과 후경골 동맥이 슬와동맥에서부터 분지되고 2-3cm 내외의 거리에서 전경골 동맥으

No. 14

Microsurgical reconstruction of the injured limb

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From February 1982 to May 1995, 481 patients had undergone reconstructive surgery of the upper and lower limb with microsurgical technique at department of orthopaedic surgery, Yonsei University of Medicine. The results were as follows;

1. Average age at the time of operation was 23.4years(2-64 years), and there was 277 male and 119 female patients.
2. Among 324 patients of soft tissue flap(87 inguinal flap, 132 scapular flap, 38 latissimus dorsi flap, 11 latissimus dorsi and scapular combind flap, 6 gracilis flap, 12 deltoid flap, 3 tensor facia lata flap, 11 dorsalis pedis flap, 6 lateral thigh flap, 12 wrap around flap, 1 lateral arm flap, 5 musculocutaneous flap), 274 cases(85.5%) were succeed.
3. Among 37 patients of vascularized bone graft(18 fibular bone graft, 11 iliac bone graft, 7 toe to finger transplantation, 1 vascular pedicle rib graft), 30 cases(80.1%) were succeed.
4. In 26 cases of segmental resection and rotationplasty at lower extremity, 23 cases were succeed.
5. In 7 cases of Tikhoff-Linberg procedure and in 2 case of segmental resection and replantation, all case was succeed.

Overall success rate of microscopic reconstructive surgery was 85.6%.

No. 15

Reconstruction of Soft Tissue Defects of the Lower Extremity with Temporoparietal Fascia Free Flap

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A variety of complex defects of the lower extremity frequently require a distant vascularized flap source for reconstruction. Numerous cutaneous and myocutaneous flaps have been utilized to provide reconstruction, many of them compose of an undesirable bulk or create unsightly secondary defect.

When we need a ultrathin flap coverage for reconstruction and seek a good tissue that leaves an inconspicuous donor site morbidity, maybe the temporoparietal fascia is the finest available source.

The temporoparietal fascia(superficial temporal fascia) flap was first described by Fox and Edgerton in 1976 and has been used to reconstruct a wide variety of complex defects. The broad, thin sheet of vascularized tissue

may be transferred alone or as a carrier of subjacent bone or overlying skin and scalp. As a pedicled flap, it is ideal for defects of the orbital, malar, mandibular, and mastoid regions. As a free-tissue transfer, it has the large vessels, ultrathin composition, and broad utility in reconstruction of the extremities.

This flap is our choice for reconstruction of the non-weight bearing surface of the foot and anterior tibial surface of the lower extrimity. The authors have found advantages of the this flap:to provide thin flap coverage which is aesthetically superior to thicker flap, to cover exposed bone and tendon without adding unwanted bulk, to supply rich capillary network offers nutrition to saucerized bone, cartilage or tendon, and overlying skin graft, and its viscous gliding surface decreases friction for tendon excursion.

The authors have successfully employed this flap to twelve patients which involved soft tissue defects of the lower extremity from May, 1995 and the results were satisfied in both areas of recipient and donor site. The cases were presented with reviewing of many other reports.

No. 16

New Surgical Technique for Harvesting Proximal Fibular Epiphysis in Free Vascularized Epiphyseal Transplantation

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Purpose:Propose a new surgical technique in donor harvesting method in free vascualized proximal fibular epiphysis.

Methodology:Concerned about growth potentials of the transplanted epiphysis in our long term results of the epiphyseal transplanted 13 cases more than 4 years follow-up, anterior tibial artery which containes anterior tibial recurrent artery is mots reliable vessel to proximal fibular epiphysis which is the best donor of the free vascularized epiphyseal transplantation. In vascular anatomical aspect proximal fibular epiphysis norished by lateral inferior genicular artery from popliteal, posterior tibial recurrent artery and anterior tibial recurrent artery from anterior tibial artery and peroneal artery through metaphysis. The lateral inferior genicular artery is very small and difficult to isolate, peroneal artery from metaphysis through epiphyseal plate can not give enough blood supply to epiphysis itself. The anterior tibial artery which include anterior tibial recurrent and posterior tibial recurrent artery is the best choice in this procedure. But anterior tibial recurrent artery merge from within one inch from bifucating point of the anterior and posterior tibial arteries from popliteal artery.

So it is very difficult to get enough vascular pedicle length to anastomose in recipient vessel without vein graft even harvested from bifucating point from popliteal artery. Authors took recipient artery from distal direction of anterior tibial artery after ligation of the proximal popliteal side vessel, which can get unlimited pedicle length and safer dissection of the harvesting proximal fibular epiphysis.

Results:This harvesting procedure can performed supine position, direct anterolateral approach to proximal tibiofibular joint. Dissect and isolate the biceps muscle insertion from fibular head, microdissection is needed to identify the anterior tibial recurrent arteries to proximal epiphysis, soft tissue release down to distal and deeper plane to find main anterior tibial artery which overlying on interosseous membrane. Special care is needed to protect peroneal nerve damage which across the surgical field.

Conclusions:Proximal fibular epiphyseal transplantation with distally directed anterior tibial artery harvesting technique is effective and easier dissect and versatile application with much longer arterial pedicle.