



INTERNATIONAL ABSTRACTS

Long-term result of free forearm skin flap for repair of soft tissue defects of the oral and maxillofacial regions

Chang H, Wu S, Liu M. Chinese J Reparation and Reconstruction Surg 1998;12:65-67.

To evaluate the long-term result of free forearm skin flap in the repair of soft tissue defects of the oral and maxillofacial regions, 26 cases which had received radical resection of maxillofacial tumors were followed-up for 4.5 years. Twenty cases with complete data were analyzed. In this series, there were 8 males and 12 females with age range from 40 to 69 years. The size of the flaps ranged from 4cm x 5cm ~ 6cm x 13cm. The radial artery and the cephalic vein were used as the donor vessels, and maxillary artery, superior thyroid artery, external and the anterior jugular vein were prepared as the recipient vessels. The result was satisfactory in all 20 cases as evaluated according to the shape, colour, temperature and sensation of the flap. The blood supply and function of the donor hand had no problem. The donor site complications were noticed in 4 cases. The conclusion were: (1) Free forearm skin flap is worth trying in the repair of soft tissue defects of oral region; (2) The radial artery need not to be reconstructed because of the abundant vascular network in the upper limb and (3) The residual scar on the forearm was the main shortcoming, but most of the patients could tolerate it because of the obvious advantages received from the operation.

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Reconstruction of the floor of the mouth with facial artery musculocutaneous flap

Yang M, Kuang M, Cao C. Chinese J Reparation and Reconstruction Surg 1998;12:68-70.

In order to study the clinical efficacy of facial artery musculocutaneous flap in repairing defects of the floor of the mouth, 21 patients had received this form of treatment from 1991 to 1997. The size of the flaps ranged from 8.0 x 3.4cm to 12.1 x 5.4cm and the average age of these patients was 59.5 year. The donor site was closed directly. Nineteen flaps survived completely, while necrosis occurred at the apex of the other 2 flaps, which healed by ordinary management. The applied anatomy of the flap and the design and the main points of the operation were described in details. The advantage of the flap and the prevention of facial malformation following operation were discussed. The conclusion was that this type of flap is ideal for reconstruction of the defects of floor of the mouth.

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Histological evaluation of collagen-hydroxyapatite composite as osseous implants in the repair of mandibular defect

Cheng Y, Zhao G, Liu H. Chinese J Reparation and Reconstruction Surg 1998;12:74-76.

To observe the collagen-hydroxyapatite composite in the repair of bone defects, ten pigs were chosen and a mandibular defect measuring 2cm in diameter was made. The composite was implanted, while the use of autogenous bone graft served as control. At 4,8,12,24 and 48 weeks after the operation, animals were sacrificed and the examination of samples under light microscope showed no infection or necrosis. The composite coalesced with the host bone and the outcome was similar to that of the autogenous bone graft. No foreign body giant cells or vacuum left from osteonecrosis was observed. It was suggested that the composite had the advantage of abundant supply, easy handling and causes no harm. The biocompatibility was good and it deserves more study as a bone substitute.

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Primary microsurgical repair of multi-structural defects of hand

Sui H, Cong H, Wang S. Chinese J Reparation and Reconstr Surg 1998;12:81-82.

Forty-eight cases of multi-structural defects of hands were primarily repaired or reconstructed from 1989 to 1997. The structural defects were the defects of radial or ulnar aspect of hands involving multiple fingers and skin. In this series, there were 32 males and 16 females with age ranging from 17 to 46 years. The composite tissue grafts were obtained from wrap-around flap or 2nd toe skin flap of the foot. The result showed that of the 108 composite tissue transplantations in 48 cases, all survived. After a follow-up of 38.5 months (ranged from 5 months to 6 years), the grasp, pinch and opposing functions of the reconstructed finger were restored the two-point discrimination sensation was 4mm-12mm. Most of the patients were completely rehabilitated and resumed their original work. The primary repair of multi-structural defects of hands by composite tissues transplantation

was feasible and valuable, but thorough debridement and skilled microsurgical technique is required.

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One stage vagina reconstruction using the pudendal thigh skin flap

He Q, Lin Z, Liu Q. Chinese J Plastic surgery and Burns 1998;14:3-5.

This is to introduce a method for vagina reconstruction using the pudendal thigh skin flap. The pudendal thigh skin flap has been used for vagina reconstruction in 70 cases since 1989. All the operations were successful and the method has become a mature technique. The advantages of the method are : (1) the reconstructed vagina has good sensation and stable in maintaining its dimensions; (2) the linear scars of the donor site are hidden and inconspicuous; (3) the appearance of the perineum looks well ; (4) the procedure is simple and favors its application.

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Effects of blocking CD₁₈ mediated leukocyte adhesion on the survival of the island flap

Gu H, Lin z, Liu Q. Chinese J. Plast Surg and Burns 1998;14:13-15.

This study was to investigate the role of leukocyte on leukocyte adhesion in tissue injury from ischemia and reperfusion. The experiment utilized the monoclonal anti-body (mAb) directed to the leukocyte adhesion glycoprotein CD₁₈ to block leukocyte adhesion and aggregation in an island flap model in rats. Tissue content of myeloperoxidase (MPO) and malondialdehyde (MDA) were detected after transient treatment with either saline or mAb

directed to CD₁₈. Flap survival was assessed 7 days afterwards. The content of both MPO and MDA was significantly increased with 8 hour ischemia and 1 hour reperfusion of the flap. The treatment with anti-CD₁₈ mAb significantly decreased the levels of MPO and MDA, and also significantly improved the survival of flaps compared with the saline - treated controls. CD₁₈ mediated leukocyte adhesion plays an important role in tissue injury from ischemia and reperfusion. Blocking leukocyte adhesion can attenuate leukocyte-mediated injury, providing protective effects on island flaps.

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Experimental study on the role of the pedicle subdermal vascular network skin flap

Miao Y, Xi Y, Su M. Chinese J Plast Surg and Burns 1998;14:16-18.

The experiment was to investigate the role of the pedicle of the subdermal vascular network skin flap. Ten healthy white pigs, each weighing from 20 to 25 kg were used. The subdermal vascular network skin flap and the traditional skin flap were designed and created on each side of the animal's flank. The traditional skin flap on the contralateral side of the flank was used as control. Flap survival was studied by gross observation and ECT examination of isotope distribution. There were significant differences between the two groups in the mean survival length and area ($P < 0.05$). In both groups the radioactive isotope gathering is restricted proximally with a ratio of length to width of (1 - 1.5) : 1. The presence of the pedicle of the subdermal vascular network skin flap makes no difference compared to the traditional skin flap.

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Expression of proliferating cell nuclear antigen in hemangioma and vascular malformations

Lin X, Wand W, Qian W. Chinese J Plast Surg and Burns 1998;14:17-22.

This study was to compare the proliferative activity of endothelial cells of various types of hemangiomas and vascular malformations in different phases. Forty one specimens of hemangiomas or vascular malformations were stained with immunohistochemical method for proliferating cell nuclear antigen (PCNA). The proliferative activity of endothelial cells was expressed by labeling index (LI). PCNA was positive in all the proliferative strawberry, composite hemangiomas and some of cavernous hemangiomas in children. PCNA was negative in all of adult involved hemangiomas and some of cavernous hemangiomas in children. There were no statically significant differences in labeling indices of PCNA between various types of proliferating hemangiomas in children while there were statistically significant differences between child proliferating hemangiomas and involved hemangiomas in children or all of adult hemangiomas. The results may be helpful to answer some bewildering questions about hemangiomas and provide a basis for new classification.

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The responses of fibroblasts from three parts of keloids and normal skin to interleukin and interleukin - 6

Xu S, Wang Z, Bao W. Chin J Plast Surg and Burns 1998;14:23-25.

The purpose of this study was to explore the responses of fibroblasts from keloids and normal skin to interleukin-1 β and interleukin-6. Six samples of normal skin were collected as

the experimental and control group respectively. The means of cell culture was used to investigate the responses of fibroblasts from the different parts of keloids and normal skin to interleukin-1p (200U/ml) and interleukin-6 (100U/ml). Interleukin-1p could inhibit the growth of fibroblasts from the proliferative part of keloids but stimulate growth of those from normal skin, while it did not affect the growth of those from other parts of the keloids.

Fibroblasts from different parts of keloids and normal skin were all inhibited by interleukin-6. The responses of fibroblasts from three parts of keloids and normal skin to interleukin-1p and interleukin-6 were not much similar.

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Effects of abnormal distribution of calcium on the impairment of myocardial mechanics in the early stage of thermal injury

Che L, Yang Z, Huan Y. Chinese J Plast Surg and Burns 1998;14 : 33-36 .

To investigate the effect of abnormal Ca^{2+} distribution on the impairment of myocardial mechanics in the early stage of thermal injury. Calcium (Ca^{2+}) changes were observed within subcellular distribution in situ in rat heart with calcium cytochemical probe and electron probe microanalytic technique. Meanwhile, myocardial mechanics and energy metabolic changes were investigated after thermal injury. The results demonstrated that levels of cytoplasmic Ca^{2+} in myocardial contraction increased at 1 hour, followed by enhanced mitochondrial Ca^{2+} at 3 hour after burn injury. Parallel to the changes in Ca^{2+} , there were decrease in myocardial contraction, and relaxation capacity and increase of ventricular wall stiffness in burned rats. A lower level of heart energy changes was observed from 6 to 12 hours, compared with the control group. The results indicate that subcellular Ca^{2+} abnormal distribution in myocardium caused by burn in-

jury may be associated with increased contraction and decreased relaxation of the myocardium.

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Bound and soluble adhesion molecule and cytokine levels in patients with severe burns

Nakae H, Endo S, Yamada Y, Inada K. - Burns, 2000,26:139-144.

In this study an attempt was made to correlate the role of endotoxins, inflammatory cytokines and soluble adhesion molecules in the pathophysiology of severe burns. Seventeen patients were included in the study whose blood was measured for the above mentioned factors. All seventeen patients had burns with a total burn surface area of 20% or more and a burn index of 15% or more. Endotoxins were measured by an endotoxin-specific assay and tumor necrosis factor, interleukin 6, and interleukin 8 and soluble adhesion molecules were measured by enzyme-linked immunosorbent assay. CD11a, CD11b, and CD18 measured by flow cytometry, were elevated in the non surviving group, the septic shock group and the multiple organ dysfunction syndrome, suggesting a close connection between these adhesion molecules and burns complicated by infection.

The results of this study suggest that adhesion molecules, inflammatory cytokines and endotoxins are strongly involved in the evolution of the pathology of severe burns and that inflammatory cytokines are involved in the production of adhesion molecules. In terms of burns treatment, these results may indicate the possibility of using anti-adhesion molecule antibodies in the future.

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Does MRI contribute to the investigation of palatal function ?

Vadodaria S, Goodacre TEE, Auslow P. *Brit J Plast Sur* 2000;53:191-199.

Velopharyngeal incompetence is a complex issue and results in speech problems. Accurate assessment of the anatomical distortion and functional disorder of the velopharyngeal port by currently available methods like nasendoscopy and videofluoroscopy have their own limitations.

In this pilot study the value of MRI scanning in investigation of velopharyngeal function has been explored. MRI is noninvasive and can be easily repeated. Images may be obtained in many axes and with far more clarity than with fluoroscopy.

The study was conducted on 10 normal volunteers and 15 patients who had speech problems related to cleft and non-cleft palate pathologies. Images were obtained in four different axes; mid-sagittal, coronal, horizontal (at the level of hard palate) and in the axis of excursion of the levator palati muscle (line drawn from mid-point of velum and external auditory meatus). The various useful informations obtained were about i) length, movement and extensibility of the velum, ii) the presence or absence of the passavant's ridge and forward movement of the posterior pharyngeal wall, iii) contribution of the lateral pharyngeal wall in the velopharyngeal closure, iv) The type and extent of velopharyngeal closure, v) The levator sling at rest and its movement to achieve lift during phonation. This study clearly indicates that MRI has great potential as an additional method of evaluating the palate before and after surgery. It may also help to guide speech therapy and surgical planning of patients suffering from velopharyngeal incompetence.

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The outcome of long-term follow-up after Palatoplasty

Park S, Saso Y, Ito O *etal. Plast Reconstr Surg* 2000;105:12-17.

Push-back palatoplasty is one of the most popular treatment for cleft palate. The bones, adenoids and other tissues of the nasopharyngeal region grow and change over time, affecting velopharyngeal function and hence speech outcome. In particular, adenoids often show hypertrophy at an early age and undergo involution before adolescence, having a marked influence on velopharyngeal competence.

In this study the speech outcome was analysed retrospectively in 140 cleft-palate (with or without cleft lip) patients who underwent push-back palatoplasty at around 18 months. Velopharyngeal function and articulation disorders were evaluated serially at 4,7,10, and more than 10 years of age. Twenty eight patients (20.0 percent), who underwent pharyngeal flap surgery during the follow up period due to poor, or derioration of speech inspite of speech therapy were excluded from the study. In remaining 112 patients, velopharyngeal function and articulation disorder was compared at 4 years of age and after more than 10 years of age. The velopharyngeal function during follow up remained unchanged in 90 patients (64.3 percent), whereas it showed deterioration in 14 patients and showed improvement in 8 patients. Changes of velopharyngeal function often occurred between 4 and 7 years of age but in a few cases it was also after 10 years. Articulation disorder was observed in 49 subjects (35.0 percent) at 4 years of age. Many of the patients with glottal stop showed improvement from 4 to 7 years of age. Palatalized articulation showed less improvement than glottal stop ($p < 0.01$). The number of patients with articulation disorders decreased significantly between 4 years of age and follow up after over 10 years of age. These findings suggest that patients with operated cleft palate should be carefully followed for improvement in speech until more than 10 years of age.

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Temporoparietal Fascia: An Anatomical and Histologic Reinvestigation with New Potential Clinical Applications.

Tellioglu AT, Tekdemir I, Erdemli EA, Tuccar E, Ulusoy G. Plast Reconstr Surg 2000;105:40-45.

Temporoparietal fascia is synonymous to superficial temporal fascia, epicranial aponeurosis or galeal extension. Vascularised by the superficial temporal vessels, this is used for reconstruction of craniofacial defects, hand defects and as free flap. It is an important structural unit in face lift and brow lift operations.

In this study a histologically supported anatomic study was conducted on 20 sides from 10 cadavers for the reappraisal of the anatomic relationships and clinical application potential of the data obtained. Temporoparietal fascia is located just under the subcutaneous tissue and could easily be separated into inner and outer parts. Superficial temporal vessels enter between inner and outer parts of the superficial temporal fascia and then travel in the outer layer of the temporoparietal fascia. The superficial temporal fascia is continuous with i) The superficial musculoaponeurotic system (SMAS) in the inferior border, ii) with orbicularis oculi and frontalis muscles in the outer border, iii) occipitalis muscle in the posterior border and iv) though definite junction cannot be determined, it is also continuous with the galea aponeurotica in the most cephalic border. Therefore, plication for the temporoparietal fascia can increase tightness of the SMAS, orbicularis oculi and frontalis muscle in rhytidectomy. The inner part of the temporoparietal fascia which has the same borders as the outer part except for the inferior border, where it blends with innominate fascia on the zygomatic arch and continues towards the masseteric fascia. The frontal branch of facial nerve were noted to course parallel to the frontal branch of the superficial temporal artery,

lying deep to the temporoparietal fascia within the innominate fascia. Hence, careful subcutaneous dissection just under the hair follicles is more appropriate as compared with subfascial dissection to avoid nerve injury and also provide excellent exposure of the temporoparietal fascia for plication in rhytidectomy with protection of the auriculotemporal nerve and the superficial temporal vessels. Histological studies revealed thin muscle layer within the outer part of temporoparietal fascia below the temporal line, hence the term 'temporoparietal myofascial flap' would be more appropriate for this flap. The innominate fascia and deeper part of temporal fascia can be elevated with two layers of the temporoparietal myofascial flap as four layered myofascial flap based on the superficial temporal vessels.

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Trigger finger in children

Cardon LJ, Ezaki M, Carter PR. J Hand Surg 1999; 24A:1156-1161.

Trigger finger in children are much less common than trigger thumbs. Treating trigger fingers in children may not be as straight forward as trigger thumb in children or trigger digits in adults. Nodular thickening of the tendons is more common in pediatric trigger digits, where as in adults the A-1 pulley tends to be thickened and constricted.

This study involves evaluation of surgical release of 33 trigger fingers in 18 children. In 8 (44%) of these 18 children, the finger continued to trigger after A-1 pulley release. The most important finding of this study is that in children, trigger finger is rare than trigger thumb and is not often associated with a fixed flexion contracture. Unlike trigger thumb, it may not respond to usual A-1 pulley release. The surgeon should plan the incision in such a way that, if necessary, after extending the incision he should be able to explore entire

tendon sheath and its contents. Excision of tendon nodules, resection of one or both slips of the sublimis tendon, and release of the A-3 pulley may be required to correct triggering when the A-1 pulley alone does not.

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Trigger finger in children

Tordai P, Engkvist O. J Hand Surg 1999;24A:1162-1165.

This 8 years period retrospective study of twelve children with triggering of 17 digits other than thumb was undertaken by the authors to verify their impression that the required treatment of triggering fingers in children is more extensive and not as simple and straight forward as with thumbs. There were eight children with single finger involvement, the remaining patients had more than one trig-

gering finger. Five children (total 7 fingers) were managed conservatively, one of these had three triggering fingers with residual triggering in all 3 involved fingers. 7 children were treated surgically. In contrast to the operative findings in children with triggering thumbs, no nodules of the flexor tendons were found in these cases. This may indicate different mechanism of triggering like anatomic variations of the chaisma of the flexor digitorum superficialis tendon. The authors advise that if an incision of the A-1 pulley alone does not clearly relieve the triggering (judged by passively moving the finger through a full range of flexion and extension), the surgical procedure should be expanded to include separation of the inserting slips of the flexor digitorum superficialis tendon and release of the proximal A-2 pulley.

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