

## INTERNATIONAL ABSTRACTS

### **PRINCIPLES OF MICROVASCULAR RECONSTRUCTION IN BURN AND ELECTRICAL BURN INJURIES**

Free tissue transplantation is not a frequent procedure in burn reconstruction, but with the significant development in recent years of the versatility and variability of free flaps, indications for the procedure have become more frequent. This German research paper presents a retrospective report of the results of 75 free flap operations in 60 severely burned patients, using 20 different free flaps. This made it possible to establish reconstructive principles pertinent to the type of injury (burn versus high voltage injuries) and the timing of reconstruction procedures. In high-voltage injuries, early free flap coverage with muscular flaps was the most frequently used type of reconstruction. The commonest reconstruction was the upper extremity and the forearm. In burn injuries (flame, contact, fluid), free flap coverage was carried out at a later stage of the treatment course (3-6 weeks post-trauma), or as a secondary procedure. The method preferred was reconstruction with skin flaps. In contrast to high-voltage injuries, the trunk and face were also recipient sites. In the upper extremity, the elbow and dorsum of the hand were the commonest reconstruction sites. The overall flap failure rate was 13%. There was a relationship between the flap failure rate and the timing of the procedure. Eight out of ten flap failures occurred within 5-21 days of the after trauma and all ten between five and six weeks. There were no flap failures during secondary reconstruction. For reconstruction of complex or large defects, combined "chimeric" flaps, pre-expansion of free flaps, or a combination of free and local flaps is recommended. The data presented show that burns and high-voltage injuries are distinct entities - each one needs a custom-tailored reconstructive solution.

Baumeister S., Koller M., Dragu A., Germann G., Sauerbier M.  
Burns, 31: 92-8, 2005

### **USE OF DORSAL ULNAR NEURO CUTANEOUS ISLAND FLAP IN THE TREATMENT OF CHRONIC POST-BURN PALMAR CONTRACTURES**

This study from Turkey assesses the efficiency of the "dorsal ulnar neurocutaneous island flap" in the covering of palmar defects resulting from the radical release of selected chronic post-burn contractures. Between November 2001 and December 2003 eight white male patients with palmar contractures were treated (mean follow-up period, 11.6 months). The flap was planned on the ulnar aspect of the forearm and the hand and was transferred to the palmar defect. The flap's subcutaneous pedicle was skin-grafted to prevent tension. All eight operations were successful and no recurrent palmar contractures were observed. It is concluded that the dorsal ulnar neuro-

cutaneous island flap can be used effectively in the treatment of post-burn palmar contractures. Flap safety can be enhanced by grafting the intervening skin between the pivot point of the flap and the palmar defect.

Ülkür E., Açikel C., Eren F., Çeliköz B.  
Burns, 31: 99-104, 2005

### **DORSAL INTERCOSTAL PERFORATOR (DICP) AUGMENTED SCAPULAR "SUPER-THIN FLAPS" FOR THE RECONSTRUCTION OF EXTENSIVE SCAR CONTRACTURES IN THE AXILLA AND ANTERIOR CHEST: A CASE REPORT**

The idea of microvascular augmented subdermal vascular network flaps for the reconstruction of cervical scar contractures was first described in 1994. These very thin yet large flaps, nourished only by subdermal vascular networks, are especially useful in the reconstruction of contour-sensitive areas, such as the face and neck, and of flexural areas over joints. This report from Japan presents a new reconstructive technique for releasing severe scar contractures of the anterior chest involving the bilateral axillae using this type of flap in a 20-yr-old man suffering from severe electrical burns involving 40% of his total body surface area (both axillae, right arm, anterior chest, and abdomen).

Oki K., Hyakusoku H., Murakami M., Oki K.  
Burns, 31: 105-7, 2005

### **PEDICLED THORACODORSAL ARTERIAL PERFORATOR FLAP FOR RECONSTRUCTION OF A LARGE DEFECT POST-BURN IN POSTERIOR SIDE OF THE ARM**

A case from Spain is presented of traumatic entrapment of the arm resulting in the loss of a considerable volume of tissue in the posterior face (21 cm x 8 cm in size), reconstructed using a thoracodorsal artery perforator flap. The results were excellent, as also regularization and adaptation of the defect, thus making this a flap of primary consideration. The patient was a 49-yr-old male who suffered entrapment of the left arm in a high-temperature printing press, resulting in section of the humeral artery at the third half level of the arm.

Laredo-Ortiz C., Salvador-Sanz J., Márquez Mendoza M., Navarro-Sempere L., Castellar Najera E., Novo-Torres A., Lorda-Barraquer E.  
Burns, 31: 108-12, 2005

### **FUNCTIONAL LATISSIMUS DORSI MUSCLE TRANSFER TO RESTORE ELBOW FLEXION IN EXTENSIVE ELECTRICAL BURNS**

This is a case report from the USA describing a case of bipolar latissimus myocutaneous flap restoration of elbow flexion and provision of soft tissue coverage following a major electrical burn injury. The patient's management is described. Recovery of elbow flexion was monitored in the subsequent months, and following intensive physiotherapy and splinting, the patient now has active elbow flexion of the latissimus dorsi unit.

O'Ceallaigh S., Mehboob Ali K.S.A., O'Connor T.P.F  
Burns, 31: 113-5, 2005

### **EXPERIMENTAL STUDY REGARDING CRYOPRESERVED HETEROGRAFT TRANSPLANT**

This report from Romania comes from the clinic that had the first system for human skin cryopreservation in that country. The results are presented of a research programme that used DNA microbial community profiling and characterization before and after the cryopreservation of heterografts. Further studies on contamination levels and not just the presence of contamination are still required in order to establish the possible beneficial effect of cryopreserving heterografts. Precise standards are necessary for the use of heterografts if favourable results are to be obtained.

Enescu D., Eftenie D., Botezatu D., Alexandru R., Gutău I., Ionița D.  
Ann. Plast. Surg. Reconstr. Surg., 2: 5-18, 2006.

### **EXPERIMENTAL STUDIES REGARDING MILLIMETRIC WAVE EFFECT ON CELL PROLIFERATION PROCESSES**

This Romanian study, which is part of a research programme, emphasizes the favourable effect of millimetric waves on cell proliferation processes. This positive effect could be used to improve processes for obtaining complex biological structures as skin substitutes. This would be useful as the substitution of the complex structure of normal skin is a great challenge in various biological situations. Different methods are currently available and subject to constant proving.

Enescu D., Enescu M., Rusu D., Giuvelea S., Șerbanescu C., Gutău I.  
Ann. Plast. Surg. Reconstr. Surg., 2: 19-25, 2006.

### **PLACE DE L'ARGENT DANS LA PRISE EN CHARGE DES PLAIES (ROLE OF SILVER IN TAKING IN CHARGE OF WOUNDS)**

The antiseptic properties of silver were known in antiquity - in ancient Greece, pieces of silver were frequently placed in water tanks to disinfect them, and in more modern times the use of silver in medicine has had an important place in the therapeutic arsenal. This French article reviews the history of the use of this precious metal in clinical practice until the modern epoch and describes current practice as regards the use of silver in burns treatment. Today, besides silver sulphadiazine, numerous silver-based bandages are used to treat burns as acute and chronic wounds.

Wassermann D., Thomas A.  
Brûlures, 7: 8-12, 2006

### **NEOPTERIN AS A PROGNOSTIC MARKER IN BURNED PATIENTS**

The capacity of serum neopterin to predict multi-organ failure and death in burn patients is still debated. This study from Egypt seeks to re-evaluate its role. Serum samples were collected from 29 burn patients on days 1, 3, and 7 post-burn and tested for neopterin. On the basis of survival or non-survival, the patients were divided into two groups in order to test neopterin as a prognostic marker. Detailed results are presented, on the basis of which it is concluded that there was no significant difference in plasma neopterin levels between survivors and non-survivors. However, non-survivors had a significantly high plasma neopterin delta change ( $p < 0.05$ ) between day 3 and day 1 post-burn), a significance that increased when combined with the burn percentage ( $p < 0.01$ ).

El-Shahat A., El-Shahat E.F.M.  
Egypt. J. Plast. and Reconstr. Surg., 30: 13-17, 2006

### **PREDICTIVE FACTORS FOR DEVELOPMENT OF ACUTE RENAL FAILURE IN MAJOR BURNED PATIENTS**

The purpose of this Egyptian study was to assess renal dysfunction in the three weeks following burn injury. The effect of burn size and septicaemia on the development of acute renal failure as also studied. Forty major burn patients were evaluated for renal efficiency for three weeks post-burn, with tests of serum creatinine, BUN, micro-albuminuria, urinary malonaldehyde, and fractional excretion of sodium. These tests were performed on days 0, 3, 7, 14, and 21 post-burn. Nine of the 40 patients experienced acute renal failure, diagnosed by rising serum creatinine and BUN and by rising rising markers of renal damage, such as micro-albinuria and urinary malonaldehyde. There was found to be a significant relation between burn size, septicaemia, and an increased incidence of acute renal failure.

Bahaa Eldin A., El-Hadidy A., Hassan M., Wahba Wafa E.  
Egypt. J. Plast. and Reconstr. Surg., 30: 87-91, 2006