ACTA CHIRURGIAE PLASTICAE

INTERNATIONAL JOURNAL OF PLASTIC SURGERY,
MAXILLOFACIAL SURGERY, HAND SURGERY AND BURNS

Vol.40 • 3/98

PUBLISHED BY THE CZECH MEDICAL ASSOCIATION J. E. PURKYNĚ

ISSN 0001-5423

INDEXED IN EMBASE/Excerpta Medica, MEDLINE/Index Medicus, BIOLOGICAL ABSTRACTS

RENAL ALLOGRAFT BIOPSY –
Image, Interpretation, Interventions

P. Rossmann, J. Jirka, K. Matoušovic

(Institute of Microbiology, Academy of Sciences of the Czech Republic and Transplant Centre of the Institute for Clinical and Experimental Medicine Prague)

360 pp, 118 Figures, 33 Tables, ISBN 80-200-0606-0

Published by ACADEMIA, Prague 1997

The monograph presents the description, classification and interpretation of bioptic findings in human renal allografts. It summarizes the results of a 30 year-long collaboration between two nephrologists (J.J., K.M.) and one morphologist (P.R.) and is based on the clinicopathological assessment of 2,400 graft biopsies performed in more than 1,500 patients. The general part displays the basic terms, indication for biopsy, processing and description of tissue samples, and classification of the changes. The special part gives the detailed description of both early and late rejection and non-rejection damage as revealed by light and electron microscopy, and immunohistochemistry. Each chapter involves the interpretation of findings and clinical notes pertaining to the individual types of lesion. The morphology of graft lesions is displayed in 118 mostly coloured Figures.

The text is focussed on the daily practical problems of diagnosis, therapy and prognosis encountered by physicians taking care of renal allograft recipients, whose numbers are rapidly increasing.

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No. 3, 1998

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Price for a single issue: Kč 54,- (Czech Republic), Sk 64,- (Slovak Republic).
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Information on subscription rate for other countries provides: CMA JEP, Sokolská 31, 120 26 Prague 2, Czech Republic.
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EDITORIAL

THE PAST, THE PRESENT AND THE FUTURE OF MEDICINE

Compiled by Radana Königová

Burns Center, 3rd Medical School, Charles University, Prague, Czech Republic

In 1850 Armand Trousseau spoke in Paris of the **fascination** which accompanies the study of MEDICINE: „Literature, painting, and music, do not yield an enjoyment more keen than that which is afforded by the study of medicine. Whoever does not find in it, from the commencement of his career, an almost irresistible attraction, ought to renounce the intention of following our profession."

In 1902 Sir William Osler determined the **task** of medicine: „To wrest from nature the secrets which have perplexed philosphers in all ages, to track to their sources the causes of disease, to correlate the vast stores of knowledge, that they may be quickly available for the prevention and cure of disease - these are our ambitions.

To observe the phenomena of life in all its phases, normal and perverted, to make perfect that most difficult of all the arts - the art of observation, to call to aid the science of experimentation, to cultivate the reasoning faculty, so as to able to know the true from the false - these are our methods. To prevent disease, to relieve suffering and to heal the sick - this is our work".

Rudyars Kipling - 10 years later - in his Book of Words set forth a **portrait** of the Doctor: „The world has long ago decided that you have no working hours which anybody is bound to respect, and nothing will excuse you in its eyes from refusing to help a man, who thinks he may need your help, at any hour of the day or night. In all time of flood, fire, famine, plaque, battle, murder it will be required of you that you go on duty at once, and that you stay on duty until your strenght fails you or your conscience relieves you".

In 1928 Sir Robert Hutchinson published in the British Medical Journal: „Every doctor must be a judge. He has to weigh the evidence of symptoms and signs, and allot to each its proper value in making the diagnosis. We can increase our powers of observation by training and practise, we can increase our knowledge by study and experience, but **judgement seems to be an inborn faculty** - the result of a union of mind and character which a man either has or has not. It may be improved only be general mental culture, and not by purely scientific training....".

Historically, all health professionals have followed the powerful traditions of Hippocrates, whose thoughts may be summarised: „...declare the past, diagnose the present, foretell the future; practice these acts. As to disease, make a habit of two things: to help or at least to do no harm...".

The emphasis on doing no harm was justified at a time when most medical treatments were useless and frequently dangerous. Once medical science began to develop effective treatment, physicians were forced to **balance burdens** and **benefits** as they decided what was in the best interest of the patient. Making moral choices is the basis of **medical decision-making** but the choice is often between two apparently „good options".

Traditionally, the physician's duty is to the pacient and this duty only extends to the family in a diluted fashion when the pacient becomes incompetent. The strong point of entrusting the use of extremely complex life support systems to physicians is - that the physicians have the knowledge and judgement to use them in a teleologically effective manner. This premise also implies that they have the expertise to know - when this technology has no benefit and should not be used.

Recently, the focus on **patient's right to refuse treatment** has shifted to the **patient's right to demand treatment** even if doctors believe that such treatment is futile. „Right to care" cases are the next step in defining the boundaries of patient autonomy. These situations involve a conflict of values as families demand continuation of care even if there is no chance of recovery or meaningful survival for the patient.

There in an other aspect to the dilemma we now face. We have been given a significant proportion of our society's wealth, enough to build, equip and staff substantial structures for modern

medicine. Technological advances have made it possible to maintain moribund and comatose patients in a state of suspended animation for prolonged and sometimes indefinite periods. The treatment of such patients by life support systems cannot strictly be said to be „medically futile" as it maintains vital signs even though it does not restore the patient to consciousness.

There is a great dispute whether a health care system already affected by rapidly increasing costs should force physicains to go against their expert judgement when families insist on maintaining prolonged coma for reasons that are defensible only in emotional terms. Hospitals have the responsibility to promote ethically sound decision - making through well drafted policies which will inform patients and families regarding the circumstances for withholding or withdrawing futile procedures in the institution. Moves to curtail excesses in health cafe delivery may now provide financial incentives to limit health care unless it is clearly beneficial.

The introduction of economic considerations in individual patient decision - making is clearly perilous, but may be necessary as society begins its debate on the most effective use of its limited health resources.

The nature of modern medicine is interventionist. „Aggresive supportive care" for comatose patients has been considered like a contradiction in terms on one hand, but on the other hand La Puma and Schiedermayer in 1989 pointed out why we should talk to comatose patients. Attempts to maintain verbal contact with patients even when the prognosis for recovery is „hopeless", reinforces the physician's role as dependable caregiver both for the patient and for those who are able to participate in health care decision-making. Nurses are taught and - in our practice - accompanying persons (family members) instructed to offer their comatose patients „environmental enrichment program". The multimode biofeedback - including verbal stimulation - may help the nurses in the difficult task of spending eight or twelve hours giving „total care" and may help the family in becoming involved in the care.

Doctors usually decide to terminate CPR because the patient is not responsive. This demonstrates that withdrawal of care can have the same moral quality as iniciating care.

Eventhough CPR or other life-sustaining maneuvers may be futile in terms of prolonging life, they could help individual patients and their families if they were of symbolic or psychologic value (Crippen, 1992).

Datmouth Medical School has made an attempt to prepare future doctors for situations likely to be encountered in practice using Problem - based Learning of the Social Sciences and Humanities. It was developed on the premise that doctors should learn to borrow relevant concepts from many humanistic and social disciplines and to integrate them into their daily decision - making process for the benefit of their patients, their communities, and eventually society as whole.

Regarding **the future** - it may be featured as **chaos making a new science**. By the late 20th century in ways never before conceivable, images of the incomprehensibly small and the unimaginably large, became part of everyone's experience - thanks to microscopes and telescopes.

In the development of one person's mind from childhood, information is clearly not just accumulated but also generated - created from connections that were not there before. The shapes of all natural objects are dynamic processes jelled into physical forms, and particular combinations of order and disorder are typical for them. The paragon of a complex dynamic system is the human body - no object of study available offers such a cacophony of counterrythmic motion on scales from macroscopic to microscopic (James Gleick, 1987).

A new kind of physiology - chaos - is built on the idea that matematical tools could help scientists understand global complex systems independent of local detail. Researchers increasingly recognized the body as a place of motion and oscillation, they found rhythms that were invisible on frozen microscope slides or daily blood samples. The dynamics are much richer than anybody would guess from reading textbooks.

Pattern born amid formlessness - that is **biology's** and **medicine's basic beauty** and its **basic mystery.**

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PENILE REPLANTATION - A CASE REPORT

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SUMMARY

The authors submit a successful case of penile replantation. They discuss the course of the procedure and document the immediate and long-term result of this procedure.

ZUSAMMENFASSUNG

Die Penisreplantation - die Beschreibung eines Falles

A. Nejedlý, M. Tvrdek, K. Bodianová, M. Urban

Die Autoren legen einen erfolgreichen Fall der Penisreplantation vor. Sie diskutieren die Replantations Methode und dokumentieren unmittelbare und langzeitige Ergebnisse dieses ausgewählten Verfahren.

Key words: penile replantation, penile amputation, replantation methods, penile injuries

Unlike replantations in the region of the upper extremities, replantations of the penis appear to be extremely rare. The reasons for this fact lies in the comparatively low incidence of penile injuries. Since the start of world replantation history, only 47 penile replantations have been reported. More than 60 per cent of penile amputations have been performed by the patients themselves, as a result of their mental diseases. Some 30 per cent of penile amputations were caused by other individuals. Simple mechanically caused injuries are less frequent. In these cases, the penile amputation usually forms part of some polytraumatic injury. As far as the general status of the patient, as well as of the character of the amputation wound, is concerned, penile replantation is not always indicated or even feasible.

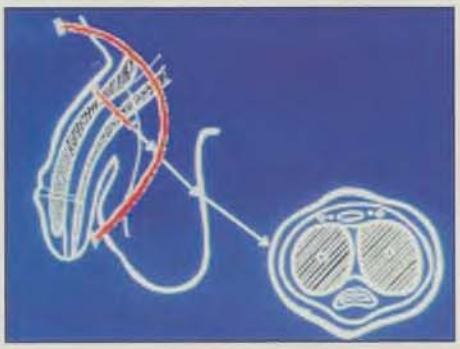

Fig. 1: Schematic drawing of penile amputation

Fig. 2: The amputated penis

Fig. 3: The amputation stump

Fig. 4: The penis immediately after replantation

The authors submit a brief report on a penile replantation performed at the Prague Plastic Surgery Department, which serves as the replantation center for the entire western part of the Czech Republic, i.e., for the whole of Bohemia.

Two years ago, in the afternoon of August 24, a mentally ill young man, aged 41 years, cut away his penis by means of a kitchen knife. He did this at home and was transported to the urology department of the local district hospital. After a phone call, he was transferred by means of helicopter to the Department of Plastic and Reconstructive Surgery of the 3rd Medical Faculty of Charles University, Prague. Here, he was admitted in the late afternoon, some 3,5 hours after the injury, under endotracheal general anesthesia. Due to extensive blood loss, his overall state was serious. A schematic drawing (Fig. 1) shows the amputated penis. The cut was sharp, dividing the membrum at its base for one third of its length. The skin and the subcutaneous tissue were cut off in the pubic area together with the peripheral third of the scrotum (Fig. 2).

At the start of the replantation, urine derivation was secured by punctional epicystostomy. All further steps were performed under bloodless conditions. A tourniquet in the form of a rubber stern was fixed at the base of the membrum (Fig. 3). Both parts, the stump and the amputated part of the penis, were approximated by means of a permanent urine catheter and the urethra was sutured by means of Prolen 5-0 single stitches. In order to prevent further uncontrolled postoperative blood loss, both deep penile arteries postoperative blood loss, both deep penile arteries were carefully ligated and the surface of both corpora cavernosa was treated by means of a bowie. The tunic albuginea of the corpora cavernosa and corpus cavernosum urethrae were sutured by means of single Vicryl stitches. An anastomosis of the dorsal penile artery was performed. Venous drainage was secured by means of the deep subfascial vein and three further subcutaneous veins. Both dorsal penile nerves were sutured in an interfascikular manner. After the tourniquet, as well as the vessel clips, had been released, the blood begun to flow again and the perfusion was unhindered (Fig. 4).

Fig. 5: The strip-like necrosis a few days after the procedure

Fig. 6: The status 24 days after the procedure

Several days postoperatively, reasonable swelling occurred, and an ischaemic strip of the skin of the scrotum, approximately 1 by 3 centimeters, was treated by an excision (Fig. 5). Afterwards, the postoperative course remained uneventful. On the 24th day following the replantation, the patient was transported to the Prague Psychiatric Center (Fig. 6). The catheter of the epicystostomy was removed at the end of the 4th week, and the urinary catheter at the end of the 5th week after surgery. The patient is now 24 months after the replantation (Fig. 7). The blood perfusion of the penis poses no problems. The urine streams freely (Fig. 8). Until now, no urethra stricture has been detected.

The patient changed his domicile, as well as his working place. Nevertheless, he has not given up his profession as a typographer.

Fig. 7: Long-term result after penile replantation

Fig. 8: Free stream of urine

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A FURTHER APPLICATION OF BURIED CHIP SKIN GRAFTING

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SUMMARY

Buried chip skin grafting used to close a granulation wound, that cannot be kept at rest, or else is in some way irritated, is described. This requires an extremely small amount of skin. Although it takes a month to heal, irritation or contamination of the grafted area does not affect or have any influence on the take of graft survival. Therefore, the patient need not be kept at rest after surgery, and can continue with daily living or rehabilitation exercises.

ZUSAMMENFASSUNG

Die weitere Applikation eines versteckten Teils von Hautstücken

Y. Sawada, Y. Nihei

Es wird beschrieben die Anwendung eines versteckten Teiles von Hautstücken zur Überdeckung der Granulationswunden, die nicht in Ruhe erhalten werden können oder sind anders gereizt. Dies verlangt extrem kleine Hauttteile. Obwohl die Heilung lange dauert, die Reizung oder Kontamination des Hautstückengebietes kommen nicht vor und hat keinen Einfluß auf die Überlebung von Hautstücken. Der Patient braucht also nicht nach dem chirurgischen Eingriff bewegungslos zu bleiben und kann sein Rehabilitationsprogramm fortsetzen.

Key words: wound closure, burn, rehabilitation, skin graft, chip skin

We have already described a technique using buried chip skin grafting for perianal burn injury (Sawada, 1989). Small chip skin grafts are buried in a granulating wound around the anus. This procedure achieves epithelialization in granulation, using extremely small amounts of skin graft. Graft survival is not disturbed by stools or by mechanical irritation. Therefore, we described previously that this procedure is considered useful for treating perianal or perineal granulating wounds in patients with deep extensive burns who have limited autograft donor sites. We report here a further application of this method which brought about excellent results in other kinds of wounds.

TECHNIQUE

The details of our technique have been previously reported with illustrations (Sawada, 1989). A small amount of split or full thickness skin is cut into a small pieces measuring about two by three mm with scissors, and these are buried into the granulating wound with forceps. A full thickness skin is beneficial as small donor sites can be closed immediately after removing the skin. After surgery, only a light dressing is applied. Neither bed rest nor suspension of rehabilitation exercises are necessary, as this has little affect on the graft take. Approximately four weeks are required for the wound to heal. We believe that this method is adequate for closing a wound in cases where the wound cannot be kept at rest after surgery, or where sufficient amounts of grafted skin are unavailable to cover the wound. If possible, the buried chip skin grafted wound should be replaced by another skin graft or flap after the wound has healed completely as the buried chip skin graft shows shrinkage of the wound, and in some instances keratinous cysts develop.

REPORT OF CASES

Case 1

A 48-year-old man with third and second degree flame burn injuries on about 70% of the body surface area. Three months after the injury, the entire burn wound had healed through skin grafting, and rehabilitation exercises had begun. The epithelialized wound on the back ulcerated. This

Fig. 1: Ulcerated wound in case 1. Figure shows preoperative state before buried chip skin grafting.

Fig. 2: One week after surgery in Case 1. The epidermis expanded from the buried chip skins.

Fig. 3: Approximately four weeks after surgery, the wound healed.

Fig. 4: Appearance one year after surgery.

Fig. 5: Because of bed rest for a long period after burn injury, a decubitus ulcer developed in the occipital area of a 28-year-old man.
←

Fig. 6: →
Four months after grafting. No trouble was seen in the healed wound.

was suspectedly due to friction of the wound with cloths or the bed during exercise. Despite conservative treatment, the ulcerated wound did not show any tendency to heal, but expanded gradually as the patient continued to exercise, intending an early return to work (Fig. 1). In this case, buried chip skin grafting was carried out. Although the patient continued to exercise after surgery, the grafted skin showed excellent take, and one month after surgery, the grafted wound had healed (Fig. 2, 3). One year later, the grafted wound had shrunk moderately, and though three keratinous cysts had developed, no ulceration had occurred in daily life (Fig. 4).

Case 2

A 28-year-old man with third and second degree flame burns on 75% of the body surface area. Due to a long period of bed rest after injury, a decubitus ulcer had developed on the occipital area. A buried chip skin graft was carried out using a small amount of full thickness skin (Fig. 5). As the patient rested in bed after surgery, and as candida albicans was detected from

Fig. 7: A 66-year-old woman with a granulating wound on her right upper arm. The wound was irritated and did not show any tendency to heal.

Fig. 8: Four weeks after surgery. The wound healed despite outer irritation after surgery.

the wound, the grafted wound healed within a month (Fig. 6).

Case 3

A 66-year-old woman suffering from progressive supranuclear palsy, had been injured from a contact burn, a month previously. Because of the patient's disease, general anesthesia was not possible. The patient could not control body movements voluntarily, so the wound was irritated on movement and did not show any tendency to heal even a month after injury. In this case, buried chip skin grafting was carried out under local infiltration anesthesia (Fig. 7). After surgery, the wound could not be kept at rest and it was constantly damaged by outer irritation. However the wound healed approximately one month after surgery (Fig. 8). Three months later, no trouble could be seen in the wound.

Case 4

A 55-year-old woman with chronic alcohol intoxication was injured by a flame burn on approximately 50% of the body surface area. The patient did not cooperate with our treatment, and scratched the wound on the chest and shoulder. In this case, a mesh skin graft had been carried out to close the wound. However, due to the patient scratching herself, the grafted skin was removed immediately after surgery. So that, buried chip skin grafting was carried out with local infiltration anesthesia approximately a month after initial surgery (Fig. 9). After chip skin grafting, the patient continued to scratch the lesion, but the grafted skin showed good take. Four weeks after surgery the wound was closed (Fig. 10). By half a year later, no trouble could be seen in the grafted wound and ulceration no longer developed after chip skin grafting.

Case 5

A 48-year-old man sat on a stove and received a second degree burn injury of the buttocks. The wound healed with conservative treatment, but after healing it ulcerated, due to irritation when sitting. Finally, the granulation tissue developed on the wound and did not show any tendency to heal as the patient continued to work (Fig. 11). He complained of pain when sitting. A buried chip skin graft was carried out. A week after surgery, he no longer complained of any pain in the wound. A month after surgery, the wound healed, and no further trouble developed (Fig. 12).

Fig. 9: A 55-year-old woman, chronic alcoholism. The patient could not stop scratching the chest wound. One week after grafting, the patient continued to scratch the wound but the buried chip skin took very well.

Fig. 10: Four weeks after surgery. The graft showed good take and the wound was closed.

Fig. 11: A 48-year-old man with second degree burn on the buttocks. Because of exercise, the wound ulcerated and did not show any tendency to heal.

Fig. 13: A 28-year-old man with patch skin grafting, The space between the skin patches is extensive and healing appears difficult.

Fig. 12: One month after grafting. No further trouble was seen.

Fig. 14: One month after buried chip skin grafting was performed in the spaces between skin patches.

Case 6

A 28-year-old man with extensive flame burn injured received a patch skin graft but the grafted skin shifted in position after surgery. Wide granulation resulted in the wound between the grafted patched skin (Fig. 13). Buried chip skin grafting was carried out in the granulation wound. Two weeks after surgery, the wound healed and since then skin no trouble has developed (Fig. 14).

DISCUSSION

In the case of extensively burned patients, ulceration of the healed wound sometimes occurs, due to rehabilitation exercises, and friction with cloths or the bed. Such wounds take a long time to heal if rehabilitation exercises continue, as the wound is continuously irritated. Furthermore, our experience shows that decubitus ulcers develop in patients. Poor nutrition and bed rest after injury can result in such decubitus ulcers. Also, in some patients, especially children,

Table 1. List of the cases, and their cause of ulceration

Age and Sex Lesion			Cause of ulceration	Period of healing
Case 1	48 male	Back	Irritation by exercise	Four weeks
Case 2	49 male	Buttock	Irritation by exercise	Four weeks
Case 3	66 female	Upper arm	Irritation by cloths	Four weeks
Case 4	55 female	Chest	Scratching	Four weeks
Case 5	28 male	Scalp	Decubitus ulcer	Four weeks
Case 6	29 male	Thigh	Insufficient grafted skin	Two weeks

scratching of wounds due to severe itching causes ulceration of the wounds.

At first, we used this method only for the closure of perianal and perineal granulation wounds (1). Despite mechanical irritation and contamination due to stools, good take and healing were seen in the grafted skin. Our present study shows that our buried chip skin grafting can be carried out with excellent results, in the closure of small granulation wounds with the exception of perianal lesions (Table 1). Although our procedure requires a month for wound closure, the grafted wound shrinks moderately. Further, epidermal cysts or pigmentation disorder develop in some cases after surgery. However, epidermal cysts were seen in only two cases in our present study. Our procedure has the following merits;

1. This method can be carried out using an extremely small amount of skin.

2. The wound can close under local infiltration anesthesia.

3. Rehabilitation exercises can be continued after surgery.

4. Bed rest after surgery is not necessary.

5. The grafted skin takes very well and the wound heals well.

As a result, this method brings about excellent results especially in cases of extensively burned patients with few donor sites available, who can not stay at rest in bed, and whose wound is continuously irritated or contaminated after surgery.

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OUR EXPERIENCE WITH THE USE OF CERIUM SULPHADIAZINE IN THE TREATMENT OF EXTENSIVE BURNS

J. Koller, M. Orsag

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SUMMARY

The development of the burn disease with infection as the most important complication represents still a major problem in burn patients. With the introduction of the method of early surgical excision of the eschar with immediate grafting in major burns, improved survival has been achieved, particularly in children. However, especially in adults, early massive excisions did not prove to be of much benefit for survival. In these cases, more-or-less sequential staged excisional procedures have been introduced by many renown burn surgeons. In 1976 Monafo et al. presented the cerium nitrate-silver sulphadiazine cream (CSD) combination for topical therapy. The addition of 2,2% of the rare earth metal cerium salt to silversulphadiazine causes the formation of a relatively hard, yellow, leather-like eschar with excellent resistance to infection and good long-term adherence to the burn wound. This allows the surgeon to perform late tangential excision and immediate autografting thus decreasing the open wound size and the rate of severe infections originating in the burn wound itself. We report our experience with the treatment of 20 patients with deep burns exceeding 20% of the BSA with cerium nitrate-silver sulphadiazine cream compared with a similar group of burn patients treated by silver sulphadiazine cream alone. CSD proved to be safe and effective in the treatment of deep and extensive burns. Its advantages include easy and painless application and removal, turning the necrotic skin to yellow, and a leathery crust with good resistance to infection, thus enabling later, or staged, sequential excisions in cases where early massive excisions are not possible.

ZUSAMMENFASSUNG

Unsere Erfahrung mit der Anwendung des Cerium Sulphadiazianum in der Behandlung von ausgedehnten Verbrennungen

J. Koller, M. Orsag

Die Entwicklung der Verbrennungskrankheit mit der Infektion ist einer der schwierigsten Komplikationen, die immer noch ein großes Problem bei den verbrannten Patienten darstellt. Mit der Einführung der frühzeitigen chirurgischen Exzision von Escharen mit unmittelbarer Spaltung bei großen Verbrennungen verbessert sich die Überlebungsfähigkeit, besonders bei Kindern. Immerhin besonders bei den Erwachsenen hilft die frühzeitige massive Exzision nicht dem Patienten überleben. In diesen Fällen wird die sukzessive Etappenexzision von vielen renommierten Chirurgen empfohlen. Im J. 1976 stellte Mofano und Gesselschaft die Cerium Nitrat-Silver Creme (CSD) in der Kombination für die lokale Behandlung dar. Der Zusatzstoff von 2,2% des Bodens von Metallceriumsalzes zum Silversulphdiazianum bildet einen relativ harten gelben Stoff, der dem Eschar ähnelt und er hat eine ausgezeichnete Widerstandsfähigkeit und eine gute langzeitige Adhäsion zur Brandwunde. Dies erlaubt dem Chirurgen die späteren tangenziallen Exzisionen durchzuführen und die unmitellbare Übertragung der eigenen Hautstücken verringert so das Ausmaß der offenen Wunde und setzt den Grad der in der Brandwunde entstehenden Infektionsgefährlichkeit herab. Wie beschreiben unsere Erfahrungen mit der Behandlung von 20 Patienten mit tiefen Verbrennungen und exidierten 20% BSA mithilfe der Creme aus Cerium Nitrat-Silver Sulphadizianum im Vergleich mit ungefähr identischer Gruppe der verbrannten Patienten, die mithilfe Silver Suiphadiazinum Creme behandelt wurden. CSD kommt in der Behandlung als sicheres und effektives Mittel im Falle der tiefen und ausgedehnten Verbrennungen vor. Sein Vorteil außer einfacher und schmerzloser Anwendung und Beseitigung ist der Wandel der nekrotischen Haut zur gelben harten Krusta mit guter Widerstandsfähigkeit gegen Infektion und die Möglichkeit der späteren oder allmählichen segmentalen Exzision in den Fällen, wo die frühzeitige massive Exzision nicht möglich ist.

Key words: extensive burns, topical treatment, cerium sulphadiazine

The development of burn disease with infection as the most important complication still represents a major problem in burn patients. With the introduction of the method of early surgical excision of the eschar with immediate grafting in major burns, improved survival has been achieved, particularly in children. However, especially in adults, early massive excisions did not prove to be of much benefit for survival. In these cases, more-or - less sequential staged excisional procedures have been preferred by many renown burn surgeons. In 1976 Monafo et al. introduced the cerium nitrate-silver sulphadiazine cream combination for topical therapy. The addition of

2,2% of the rare earth metal cerium salt to silversulphadiazine causes the formation of a relatively hard, yellow, leather-like eschar with excellent resistance to infection and good long-term adherence to the burn wound. This allows the surgeon to perform also later tangential excisions and immediate autografting, thus decreasing the open wound size and the rate of severe infections originating in the burn wound itself. We report our experience with the treatment of 20 patients with deep burns exceeding 20% of the BSA with cerium nitrate-silver sulphadiazine cream (Flammacerium Duphar).

MATERIAL AND METHODS

During the years 1993 - 1994 a group of 20 patients with extensive burns exceeding 20% of the BSA were treated with cerium sulphadiazine cream (CSD, Flammacerium Duphar) at our burn centre. This treatment group was compared with a group of 18 patients treated with silver sulphadiazine cream alone (Flammazine Duphar, and Dermazin LEK) (Tab. 1, 2).

Both systemic and surgical treatment in both patient groups were the same, except for the topical medication, and was as follows: Shock treatment was guided according to the Parkland formula. Early enteral feeding was used in all acutely admitted patients. Early excisions were started on day 2 or 3 post - burn whenever possible. Both Flammacerium and Flammazine were applied once daily on the burn wounds according to the manufacturer's recommendations.

Table 1. Patient groups

CSD:	Cerium + SSD	20
SSD:	Silversulphadiazine	18

Table 2. Patient groups

	CSD	SSD
Mean age	42,05	31,26
Mean BSAB	45,66	32,97
Mean BSAB III°	27,1	19,46
Mean LOS	31,18	26,89
Inhalation i.No.	8	2
Mean No. of operations	1,6	2

(LOS) - lenght of stay, BSAB = body surfance area burn)

The excised wounds were covered with skin autografts when they were available in adequate quantities, in other cases with cadaver skin allografts, or auto- and allogenic combined meshed „sandwich" grafts.

As both of the topical agents were reported to cause disturbances in white blood cell and platelet counts, we checked the leukocyte and thrombocyte counts at regular intervals, on days 1, 3, 7, and 10 post-burn.

We also checked the colonisation of the burn wounds with pathogenic bacteria.

RESULTS

The data of the two patient groups are displayed on Table 2 and 3. The mean age, mean body surface area burn (BSAB), and mean full thickness area burn (FTAB) were higher in the Flammacerium group, as was the number of inhalation injuries.

Table 3. Admission

Admission day	CSD	SSD
PBD 1	12 (5)	8
PBD 2	3	4 (3)
PBD 3	2 (2)	1
PBD 4	3 (2)	0
PBD 5	0	1
PBD > 5	0	2
TOTAL	20 (9)	18 (3)

(PBD = post burn day)
(Numbers in parentheses = number of deaths)

Both the leukocyte, and thrombocyte counts were the lowest on day 3; later they increased significantly above normal values, particularly thrombocytes.

Table 4. Infection

microorganism	CSD (%)	SSD (%)
S. epidermidis	65	44
S. aureus	30	38
Enterococcus	40	33
Pseudomonas	25	11,1
Acinetobacter	25	16,6
Corynebacterium	20	16,6
Strept. pyog.	20	5,5
Klebsiella	15	16,6

Table 5. Mortality

	CSD	SSD
> 50 years	5	2
< 3 years	0	1
ARDS	5	1
Renal failure	2	0
Shock	1	2
Mean BSAB	47,6	30,5
Mean BSAB III	42,8	30,5
TOTAL/INHAL	9/8	3/2

The most frequently found micro-organism was Staphylococcus epidermidis, followed by Staph. aureus, Enterococcus, Pseudomonas, and Acinetobacter. The differences in bacterial colonisation between the two groups in wound colonisation were not significant (Tab. 4).

Mortality was significantly higher in the Flammacerium group (Tab. 5). This could be attributed partly to the high incidence of inhalation injuries in this group, and partly to the higher mean age, higher mean BSAB, and higher mean FTAB.

DISCUSSION

It is always difficult to do a comparison of two topical treatment methods in burn patients, particularly when there are significant differences in major parameters such as patient age, BSAB, FTAB, and inhalation injuries. Our study was neither prospective nor randomised. Therefore it is not possible to draw relevant conclusions. We can only present our personal observations based on our experience with the use of Flammacerium in extensive and deep burns. As almost half of the patients were not treated primarily from the first day after the injury, it was not possible to evaluate the eventual positive effect of Cerium salts on the immune system, as has been described in the literature (Scheidegger 1992). We did not observe any adverse effect of Flammacerium on changes of leukocytes and trombocytes in the blood in our group of patients.

Local tolerance of the preparation was very good. The level of pain during or after application was fully comparable with the application of silversulphadiazine. From the surgical point of view, the yellow discoloration and leathery appearance of the necrotic skin was an advantage in cases where the surgical excision had to be postponed to a later period, or in cases where staged, sequential excision of the burn necroses were performed in intervals of several days apart. The occurrence of local infections was practically the same in both groups. The higher mortality in the cerium silversulphadiazine treated patients can be explained by a significantly higher rate of inhalation injuries, greater age, a greater extent of burns, and particularly by deeper burns in the CSD-treated patients. Our observations were very similar to those described in the literature (Beck 1992; Boeckx 1992; Hermans 1984; Lorenz 1988).

In conclusion, CSD proved to be safe and effective in the treatment of deep and extensive burns. Its advantages include easy and painless application and removal, turning the necrotic skin to yellow, and a leathery crust with good resistance to infection, thus enabling later, or staged, sequential excisions in cases where early massive excisions are not possible. We used CSD mostly in more severe and problem cases, which

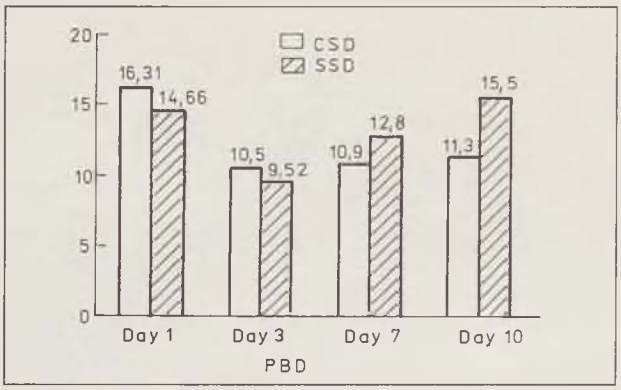

Fig. 1. Leucocytes.

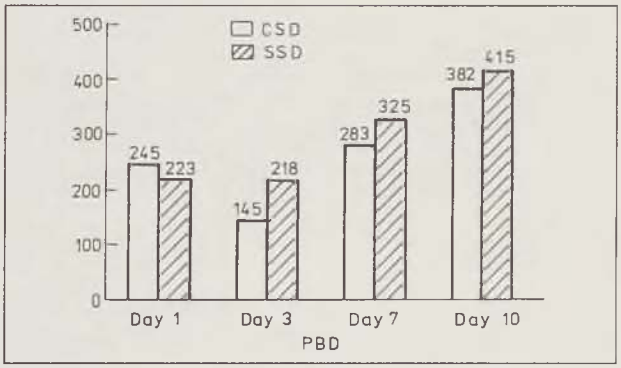

Fig. 2. Thrombocytes.

can partly explain the higher mortality. With the methods we used it was not possible to prove the positive effects on the immune system of the burned patients which were described in the literature.

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ACTA CHIRURGIAE PLASTICAE 40, 3, 1998, pp. 76 - 78

THE USE OF GROWTH HORMONE IN THE TREATMENT OF EXTENSIVE BURNS: A CASE REPORT

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SUMMARY

Growth hormone is an anabolic hormone that causes increased cell growth, positive nitrogen and calcium balance, lipolysis, hyperglycemia, and promotes protein synthesis. Its beneficial effect in burn treatment was proven particularly in children, by Herndon's group. The authors report The case of a 12-year-old boy with an electrical arc burn of 81% of the BSA, 60% of the BSA being full thickness loss. Recombinant human growth hormone (Norditropin, Novo Nordisk) was administered at daily doses of 0.52 i.u./kg starting on day 19 post-burn for 15 consecutive days. The treatment was well tolerated except for mild insulinoresistance, which could be easily corrected by slightly increasing the insulin added to glucose solutions. After 56 days of intensive care treatment and several excision and grafting procedures, the majority of burns were healed.

ZUSAMMENFASSUNG

Die Verwendung vom Wachstumshormon in der Behandlung von ausgedehnten Verbrennungen. Die Beschreibung eines Falles.

J. Koller, Z. Marinov, K. Kvalteni

Der Wachstumshormon ist ein anabolischer Hormon, dessen Auswirkung das Zellenwachstum, positives Nitrogen, das Niveau von Kalzium, Lipolysum, Hyperglykämie erhöht und die Proteinsynthese unterstützt. Als nutzbarer Effekt in der Behandlung von Verbrennungen wurde er teilweise bei den Kindern von Herdonnsgruppe erwiesen. Die Autoren beschreiben den Fall eines 12-jährigen Jungen, der vom Lichtbogen an 84% der Körperfläche verbrannt wurde, wobei sich in 61% um einen Vrelust im vollen Maß handelte. Der rekombinante menschliche Wachstumshormon (Norditropin, Novo Nordisk) wurde in täglicher Dosis 0,52 I.u./Kg vorgeschrieben. Die Behandlung hat am 19 Tag nach der Verbrennung angefangen und dauerte 15 folgende Tage. Die Behandlung wurde gut ertragen, mit Ausnahme von einer milden Resistenz gegenüber Insulin, die durch eine leichte Erhöhung in die Glukosalösung zugegebenes Insulin geregelt wurde. Nach 56 Tagen der intensiven Behandlung und einigen Exzisionen und Hautstücken wurden die meisten Verbrennungen geheilt.

Key words: extensive burns, growth hormone, donor site healing

The beneficial effects of growth hormone in the treatment of severe burns were proven, particularly in children, by Hendon's group (Herndon 1990, Gore 1991, Fleming 1992, Muller 1993, Gilpin 1994). Due to the favourable reports of its effects on donor site healing and metabolism, we used growth hormone treatment in a 12-year-old boy with an electrical arc burn of 81% of the BSA, 60% of the BSA being full thickness loss. The boy was transported to our burn centre within 30 minutes after the accident. He climbed on to the roof of a railway carriage and was hit by an electrical arc from the 25 000 V overhead cable. In addition to extensive burns he also fell from the carriage roof, which was about 3 m high. Immediately after his admission substitution treatment of the burn shock according to the Parkland formula was started. The patient was sedated, intubated, and artificially ventilated on a Siemens Elema ventilator. Escharotomies on his chest, neck, left upper and lower extremities were urgently performed. The wounds were dressed with Flammacerium. He was then admitted to the intensive care unit and nursed on a Clinitron bed. The shock treatment was precisely guided by invasive hemodynamic monitoring. On the second postburn day, early sequential excisions of full thickness burns were started with fresh frozen meshed allografts, later with sandwich allo- and autograft coverage. Realimentation was performed by early intragastric feeding with the use of a nasogastric tube. Treatment with anti-oxidants, vitamins, immunomodulators and antibiotics was performed according to our treatment protocol. In a period of 5 weeks 7 operations under general anesthesia were performed until more than 90% of the original wound area was covered by autografts. On day 10 after admission he could

be weaned of the ventilator and intensive circulatory support. In order to try to speed up healing of both the donor sites and the burn wounds, recombinant human growth hormone (Norditropin, Novo Nordisk) was administered at daily doses of 0.52 i.u./kg starting on day 19 post-burn (after the second autografting) for 15 consecutive days. During the treatment with growth hormone, routine vital sign, haematological, biochemical, and metabolic monitoring was continued. We focused our attention particularly on the nitrogen balance, temperature, leucocyte count, signs of systemic and/or local infection, take of skin grafts and healing of donor sites.

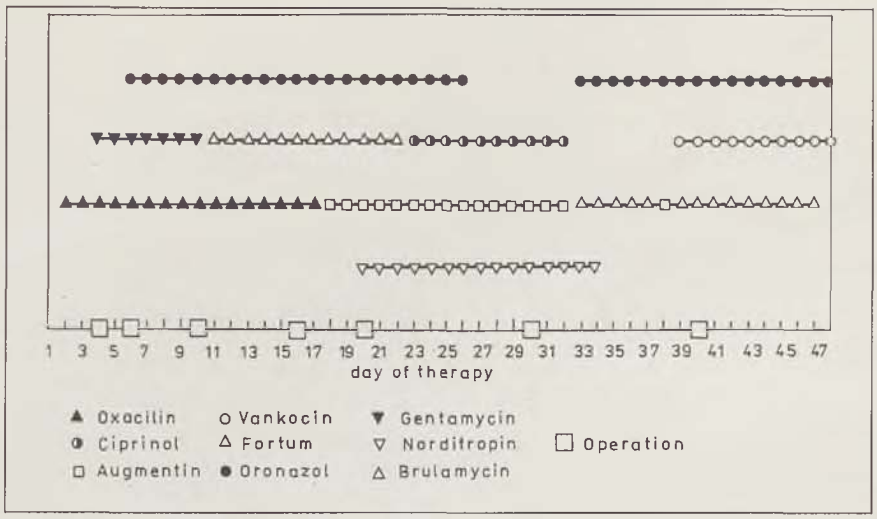

Fig. 1: Summary review of antibiotic therapy and timing of surgical procedures.

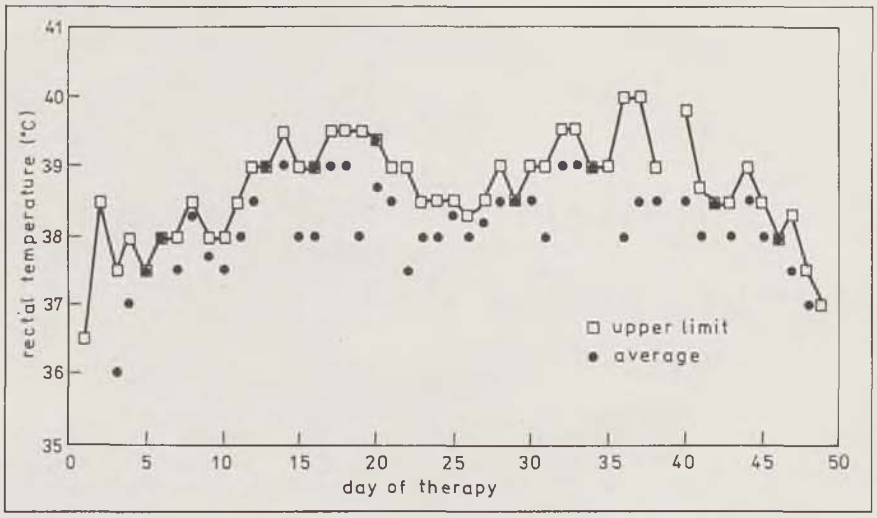

Fig. 2: The temperature curve during the first 49 days of treatment.
Upper values: maximal daily temperature
Lower values: average daily temperature

RESULTS

The treatment was well tolerated except for mild insulinoresistence, which could be easily corrected by slightly increasing the insulin added to glucose solutions. Three incipient septic episodes during the 2nd, 3rd, and 5th weeks were treated by antibiotics according to sensitivity results. A summary of the antibiotic therapy is displayed in Figure 1. The daily temperature curve is in Figure 2 (upper limit means the maximal temperature reached during the day). Nitrogen losses were also measured in the urine, but these measurements have little relevancy in extensive burns because of uncontrollable losses through the burn wound itself. Taking into account these limitations, no significant changes in nitrogen balance could be observed during growth hormone treatment except that the daily differences were (Fig. 4) smaller than before the treatment. Regarding the leucocyte counts, the lowest values were observed on day 4, i.e. after the first extensive excision procedure (Fig. 3).

The available donor sites were limited to the central part of the back, the right arm and forearm, and the scalp. The healing of donor sites after the first harvesting took as long as 14 days. The healing of donor sites during treatment with growth hormone was shortened to 5 - 7 days, i.e. about half as long. Although it was very difficult to measure the healing in of the autografts, the healing in of both the autografts and the residual defects during treatment with growth hormone seemed to be faster and of better quality.

After 56 days of intensive care treatment and seven excision and grafting procedures, the majority of the burns were healed and the patient could be transferred from the ICU to the intermediate care department.

DISCUSSION

Growth hormone is an anabolic hormone that causes increased cell growth, positive nitrogen and calcium protein synthesis (Muller 1993). Growth hormone levels are depressed after burn injury (Jeffries 1992). Growth hormone was proven to speed donor site healing and shorten the length of hospital stay at a dosage of 0.2

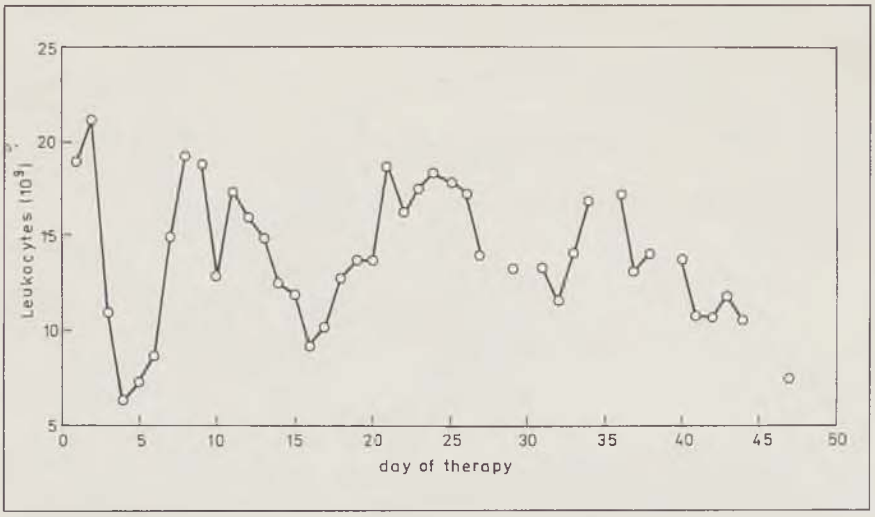

Fig. 3: Changes in leucocytes counts in peripheral blood.

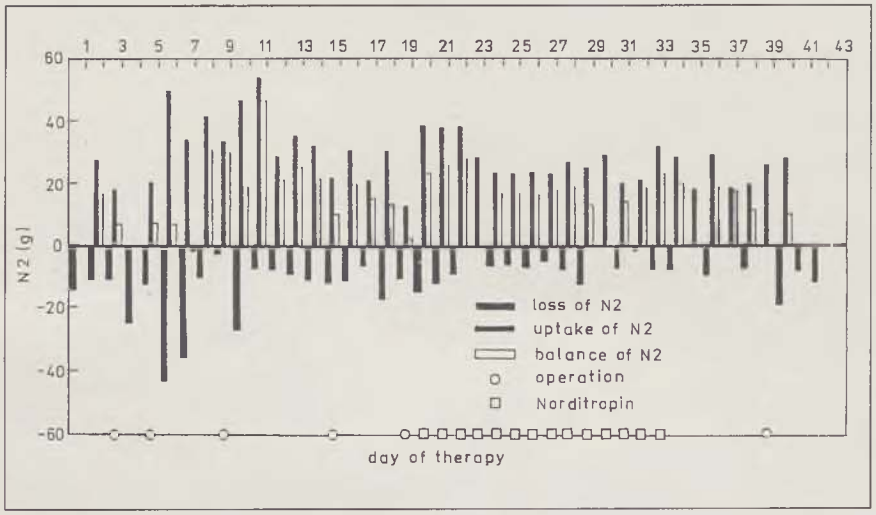

Fig. 4: Summary review of daily measured nitrogen balance. The losses were calculated from nitrogen content of the urine, the uptake was calculated from food and i.v. solutions.

mg/kg per day but not 0.1 mg/kg per day (Shernan 1989, Herndon 1990, Gilpin 1994). On the other hand, Belcher (1989) in his study failed to improve nutrition status in burned patients with growth hormone treatment at a dose of 0.03 or 0.06 mg/kg/day for 15 days. His study was performed on adult patients with burns ranging from 15 to 45% of the BSA, whereas Herndon's study was on paediatric patients with burns exceeding 40% of the BSA. It seems that this failure could be attributed to the low dosage of the growth hormone, which was 4 to 7 times lower than in Herndon's group of patients. The beneficial effect of growth hormone on the healing of donor sites was also observed in adult patients (Shernan 1989).

The treatment of one patient is not sufficient for drawing relevant conclusions. We can only state that our positive experience with growth hormone treatment in our patient with extensive burns supports the results reported by Herndon and Shernan.

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ACTA CHIRURGIAE PLASTICAE 40, 3, 1998, pp. 79 - 82

MORTALITY IN PEDIATRIC BURNS IN THE PRAGUE BURNS CENTRE (1994 - 1997)

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SUMMARY

The authors evaluate the mortality of severely burned children hospitalized in the Intensive Care Unit, Prague Burns Centre from 1994 till 1997. There were hospitalized 345 children (aged 3 months - 15 years, 1% - 88% TBSA, mixed superficial and deep burns).

No child died from burn shock during the early postburn period. Five children who died suffered deep burns greater than 50% of TBSA and at necropsy there were identified signs of multiple organ system failure which was related to infection.

ZUSAMMENFASSUNG

Die Mortalität der verbrannten Kinder am Prager Verbrennungszentrum in den Jahren 1994 - 1997

J. Kripner, L. Brož, R. Königová, I. Bouška

Die Autoren bewerten die Mortalität der schwer verbrannten Kinder, die an der Intensivstation am Verbrennungszentrum in Prag in den Jahren 1994 - 1997 hospitalisiert wurden. In dieser Zeit wurden 345 Kinder im Alter vom 3 Monaten bis 15 Jahren mit gemischten äußerlichen und tiefen Verbrennungen mit Umfang von 1% bis 88% der Gesamtkörperfläche hospitalisiert. Kein von diesen Kindern ist an Verbrennungsschock gestorben. Fünf Kinder, die starben, hatten eine Verbrennungsverletzung im Umfang von 50 und mehr Prozent der Körperfläche eines tiefen Grades erlitten. An den Sektionsbefunden bei diesen Kindern waren Symptome von Multiorganenbehinderung im Zusammenhang mit der Infektion.

Key words: mortality, pediatric burns, multiple organ failure, infection

In 1994 the Prague Centre established the Intensive Care Unit for pediatric burns of all age cathegories. Till then there had been admitted children older then 3 years, the younger ones had been treated in the pediatric wards or in the resuscitation centres in the pediatric departments in Prague (Motol, Krč, Bulovka).

Since 1994 till 1997 the Prague Burns Centre hospitalized 345 children (3 months - 15 years of age, 1% - 88% of TBSA mixed superficial and deep burns) (Table 1).

Indications for admission to the ICU were all „major" burns (the criteria have been identical to those agreed in the USA by the A.B.A. and by the burns centres in the UK; 3, 6).

1. Burns of more than 5% TBSA in an infant
2. Burns of more than 10% TBSA in a child under 10 years
3. Inhalation injury
4. Burns to head, face, neck, perineum
5. Circumferential burns (chest, limb)
6. Crushing burns of the hands or feet
7. Electrical burns
8. Chemical burns
9. Polytrauma

In admitted children the replacement fluid therapy, respectively artificial ventilation were started or continued:

Table 1. Pediatric burns treated in the Prague burns centre in 1994 - 1997

Extent of burn	1994	1995	1996	1997	total
extent < 10%	24	30	24	18	96
extent 10 - 30%	42	68	45	47	202
extent > 30%	15	16	9	7	47
total	81	114	78	72	345
died	2	-	3	-	5

Table 2. Causes of death in pediatric burns (1994 - 1997)

patient	age	sex	mechanism of injury	extent of burn	cause of death	day of death
No. 1	4 years	M	flames	88%	heart failure	19
No. 2	14 years	M	electrical injury	85%	septic shock	78
No. 3	2,5 years	F	scald	50%	ARDS	31
No. 4	12 years	F	electrical injury	73%	septic shock	19
No. 5	1,5 years	F	scald	67%	septic shock	69

1a) 1b)

Fig. 1a, b: Patient No. 1 on admission.

2a) 2b)

Fig. 2a, b: Patient No. 2 on admission.

3a) 3b)

Fig. 3a, b: Patient No. 3 on admission.

• the quantity of salt containing fluid to achieve satisfactory urine output was calculated using formula:

2 ml/kg/% burn with addition of the physiologic daily fluid requirements determined for the individual age cathegory

• the quality of resuscitation fluids varied depending upon the age and the extent of burn

• each formula indicates only the total quantity of the fluids so that monitoring can concentrate on the precise needs of the individual patient regarding quality and manner of application and should take into account the response of the particular child to the fluid regimen (clinical condition and laboratory findings)

• the basic therapeutical schedule comprehended Heparin, antagonists of H2-receptors, calcium gluconicum, antihistaminic drugs, analgesia and sedation. No prophylactic administration of antibiotics

• early enteral feeding was encouraged in the initial stages

• parenteral nutrition was started 24 hours after fluid replacement therapy

In 298 children suffering from burns involving less then 30% TBSA the occurence of complications was low: 3 children developed sepsis and 1 child multiple organ failure (MOF) without fatal outcome.

In 47 children suffering from burns in more than 30% TBSA the systemic inflammatory response syndrome (SIRS) was identified in 98%. This group of patients showed remarkable increase of complications related to infection (4, 5):

sepsis	10 children (21,3%)
septic syndrome	8 children (17%)
septic shock	4 children (8,5%)
MOF	7 children (14,9%)

All 5 children who died sustained deep burns greater than 50% TBSA (Tab. 2).

Mortality in the group of children with burns gerater than 30% TBSA was 10,6%. Mortality in all children treated in the ICU during the 4 years period was 1,4%. No child died from burn shock during the early postburn period, which might be the result of an improvement in the continuity of prehospital and hospital emergency care, which has been focused on an early and adequate shock therapy.

If any complications had occurred in the shock period the following course of treatment was unsatisfactory. In the majority of patients there were developing complications in various organs related to the extent and depth of burn wounds which required multiple repeated surgery. Longlasting protracted burn care appeared as predisposing factor of local as well as of systemic infection. The increased risk of septic complications was depending upon the indispensability of invasive therapeutical methods (especially manifold cannulations of the central venous system, longlasting artificial ventilation and indwelling urinary catheters).

From the clinical point of view the most frequent organ dysfunctions was taking place in the lung, heart, kidneys, liver, the gastrointestinal tract (GIT) and blood clotting system which have been published in other studies (1, 2).

The post mortem findings in our study revealed different morphologic lesions (Tab. 3):
in 5 children - anatomical changes in the lung, kidneys, spleen and brain
in 4 children - changes in the heart and liver
in 4 children - involution of the thymus
in 2 children - adrenal cortex lipid deplation
in 1 child - changes in the GIT.

Table 3. Necroptic findings in the involved organs

Lung	bronchopneumonia, hyaline membranes, successive septic pulmonary embolism
Heart	focal myocardial necrosis of the posterior wall and septum, dilatation of ventricles, septic myocarditis, subendocardial hemorhage of the left ventricle, septic thrombosis of right atrium
Kidneys	acute nephrosis, acute interstitial nephritis, successive septic embolism
Liver	steatosis, septic hepatitis
Brain	edema, burn encephalopathy, (atrophy of the hemispheres with demyelination of the white mater)
GIT	catarrhal enterocolitis
Spleen	septic activation
Thymus	involution
Adrenal glands	lipid depletion of the cortex

CONCLUSION

The SIRS is a complex response to burn injury affecting different tissues and organs which may react by promoting a variety of changes leading to multiple organ dysfunction and finally to multiple organ failure. In the majority of cases MOF is related to infection. The risk of infection is proportional to the severity of burn injury, to the postburn interval and the adequacy of shock treatment, to the metabolic derangements, to the level of immunodeficiency, and to associated injuries. The prognosis is influenced by the infection arising from the burn wounds, from the respiratory tract, from the gastrointestinal tract, from the venous system or the infection is transfered by the staff.

Septic complications have been and still are the principal lethal cause in pediatric burns. Although modification of the various mediators influencing the development of the SIRS, sepsis and MOF appears as an encouraging possibility,

our partial understanding of these processes makes us draw back and not to interfere in this complex cascade which has evolved over thousands of years (7). Meticulous clinical care and the interdisciplinary approach in the intensive care unit should be the basis for prevention of sepsis and MOF:

1. Stabilization of whole-body hemodynamics with adequate tissues perfusion.

2. Support of the gut barrier (early enteral feedings).

3. Proper management of burn wounds (early excision + early closure).

4. Regular infection control of all possible sources of infection in patient, in staff and in the equipment of the ICU.

The analysis of the fatal cases and their necropsies might help to elucidate the problems of MOF.

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Replantace penisu - popis případu

A. Nejedlý, M. Tvrdek, K. Bodianová, M. Urban

Autoři předkládají úspěšný případ replantace penisu. Diskutují průběh replantace a dokumentují bezprostřední a dlouhodobé výsledky zvoleného postupu.

Další aplikace vnořeného kožního štěpu

Y. Sawada, Y. Nihei

Je popsáno užití vnořeného kožního štěpu k překrytí granulačních ran, které nemohou být udrženy v klidu nebo jsou jinak drážděny. Metoda vyžaduje extrémně malé částečky kůže. Ačkoliv je hojení dlouhé, podráždění nebo kontaminace transplantované oblasti se nevyskytuje a nemá žádný vliv na přežití štěpu. Pacient tedy nemusí být po chirurgickém zákroku znehybněn a může pokračovat v léčebném a rehabilitačním programu.

Naše zkušenost s užitím cerium sulfadiazinu v léčbě rozsáhlých popálenin

J. Koller, M. Orsag

Rozvoj popáleninové nemoci s infekcí je nejzávažnější komplikací, která představuje stále velký problém u popálených pacientů. Se zavedením metod včasné chirurgické excize příškvarů (eschar) s bezprostředním štěpováním u velkých popálenin se zlepšuje přežití, zejména u dětí. Nicméně zejména v dospělé populaci včasná masivní excize nepomáhá pacientovu přežití. V těchto případech více či méně posloupná etapovitá excize je doporučována mnohými renomovanými popáleninovými chirurgy. V r. 1976 představil Mofano a spol. cerium nitrat-silver sulfadiazinový krém (CSD) v kombinaci pro lokální léčbu.

Přísada 2,2% zeminy kovové ceriové soli k silversulfadiazinu vytvoří relativně tvrdou žlutou látku podobnou příškvaru s vynikající odolností vůči infekci a s dlouhodobou dobrou přilnavostí k popáleninové ráně. To dovoluje chirurgovi provést pozdější tangenciální excize a bezprostřední přenos vlastních kožních štěpů tak zmenšuje rozměry otevřené rány a snižuje stupeň závažnosti infekce vznikající v samotné popáleninové ráně. Popisujeme naše zkušenosti s léčením 20 pacientů s hlubokými popáleninami s excidovanými 20% BSA krémem s cerium nitrat-silver sulfadiazinu v porovnání s přibližně stejnou skupinou popálených pacientů léčených silver sulfadiazinovým krémem. CSD se jeví v léčbě jako bezpečný a efektivní prostředek u hlubokých a rozsáhlých popálenin. Jeho výhodou kromě snadné a bezbolestné aplikace a odstranění je přeměna nekrotické kůže ve žlutou kožovitou krustu s dobrou rezistencí vůči infekci a umožňující pozdější nebo postupné segmentální excize v případech, kde včasná masivní excize není možná.

Užití růstového hormonu v léčbě rozsáhlých popálenin - popis případu

J. Koller, Z. Marinov, K. Kvalteni

Růstový hormon je anabolický hormon, jehož působením se zvyšuje buněčný růst, pozitivní nitrogen, hladina kalcia, lipolýza, hyperglykemie a podporuje proteinovou syntézu. Jeho užitečný efekt v léčbě popálenin byl částečně prokázán u dětí Herdonské skupiny. Autoři popisují případ 12letého chlapce popáleného elektrickým obloukem na 81% BSA, přičemž v 60% se jednalo o ztrátu v plné síle. Rekombinantní lidský růstový hormon (Norditropin, Novo Nordisk) byl předepisován v denní dávce 0,52 i.u./kg. Léčba byla zahájena 19. den po popálení po 15 následných dnů. Léčba byla dobře snášena, s výjimkou mírné rezistence na insulin, která byla upravena lehkým zvýšením insulinu, přidaného do roztoku glukózy. Po 56 dnech intenzivní léčebné péče a několika excizích a kožních štěpech byla většina popálenin vyléčena.

Úmrtnost popálených dětí v pražském popáleninovém centru v letech 1994 - 1997

J. Kripner, L. Brož, R. Königová, I. Bouška

Autoři hodnotí mortalitu těžce popálených dětí, které byly hospitalizovány na jednotce intenzivní péče Popáleninového centra v Praze v letech 1994 - 1997. V tomto období bylo hospitalizováno 345 dětí ve věku od 3 měsíců do 15 let se smíšenými povrchními a hlubokými popáleninami s rozsahem od 1% do 88% celkového tělesného povrchu. Žádné z dětí nezemřelo na popáleninový šok. Pět dětí, které zemřely, utrpělo popáleninový úraz s rozsahem 50 a více procent tělesného povrchu, hlubokého postižení. Na sekčních nálezech u těchto dětí byly známky multiorgánového selhání v souvislosti s infekcí.

ANNALS OF BURNS AND FIRE DISASTERS

Official publication of The Mediterranean Club for Burns and Fire Disasters (MBC)

WHO COLLABORATING CENTRE

VOLUME X **NUMBER 4** **DECEMBER 1997**

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c/o Secretariat of The Mediterranean Club for Burns and Fire Disasters - Divisione di Chirurgia Plastica e Terapia delle Ustioni

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AWARD OF THE G. WHITAKER INTERNATIONAL BURNS PRIZE PALERMO, ITALY FOR 1998

In the course of a meeting held on March 28th 1998 at the seat of the G. Whitaker Foundation, Palermo, after examining the scientific activity in the field of research, teaching, clinical organization, prevention and cooperation among the nations, presented by various candidates, in the light of the consideration guiding the analysis of the high level of the candidates, the Adjudicating Committee unanimously decided to award the prize for 1998 to: PROF. DR. FRIEDRICH E. MÜLLER, former head of Department of Plastic Surgery and Burns in the „Berufsgenossenschaftlichen Krankenanstalten Bergmannsheil" at the University Hospital in Bochum, Germany.

The prize is awarded with the following motivation:

„He began his professional activity showing specific interest in the sector of burns.

In 1967 he organized the first centre for the treatment of burns in Germany, at Bochum, which he directed. He contributed to the opening of other centres in other cities in Germany.

He organized a network linking the various burn centres in Germany, with a view to the management of beds in the event of disasters.

His studies have concerned all the aspects of the burn disease. He has taken a particular interest in burn shock and immunological and infective aspects, supporting the trend towards the use of early surgery in burns treatment.

The results of his studies have been collected in numerous publications that have appeared in various specialized journals and three volumes".

The official prize-giving of the prestigious award will be held on September 24th 1998 in Palermo at the seat of the G. Whitaker Foundation in the presence of the authorities and of representatives of the academic, scientific and cultural world.

G. WHITAKER INTERNATIONAL BURNS PRIZE-PALERMO (Italy)

Under the patronage of the Authorities of the Sicilian Region for 1999

By law n. 57 of June 14th 1983 the Sicilian Regional Assembly authorized the President of the Region to grant the „Giuseppe Whitaker Foundation", a non profit-making organization under the patronage of the Accademia dei Lincei with seat in Palermo, an annual contribution for the establishment of a „G. Whitaker Internatinal Burns Prize" aimed at recognizing the activity of the most qualified experts from all countries in the field of burns pathology and treatment.

The amount of the prize is fixed at twenty million Italian Lire. The prize will be awarded every year by the month of June in Palermo at the seat of the G. Whitaker Foundation.

The Adjudicating Committee is composed of the President of the Foundation, the President of the Sicilian Region, the Representative of the Accademia dei Lincei within the G. Whitaker Foundation, the Dean of the Faculty of Medicine and Surgery of Palermo University, the President of the Italian Society of Plastic Surgery, three experts in the field of prevention, pathology, therapy and functional recovery of burns, the winner of the prize awarded in the previous year and a legal expert nominated in agreement with the President of the Region as a guarantee of the respect for the scientific purpose which the legislators intended to achieve when establishing the prize.

Anyone who considers himself to be qualified to compete for the award may send by January 31st 1999 his detailed curriculum vitae to: Michele Masellis M. D., Secretary-Member of the Scientific Committee G. Whitaker Foundation, Via Dante 167, 90141 Palermo, Italy.

INSTRUCTIONS TO AUTHORS

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Jan Potměšil, herec s károu

Herectví nad sportem (fotbalem a lyžováním) definitivně zvítězilo až v posledním ročníku gymnázia. DAMU absolvoval v roce 1989 jako mladý herec známý z řady filmových a divadelních rolí. V listopadu 89 byl Romeem naplno vtažen do revolučních událostí. Při návratu z mítinku s ostravskými horníky došlo k autohavárii. Probudil se v únoru s nohama bez života. Lví srdce, rodina a kamarádi zůstali.
Když skončila rok a půl trvající "hodina mezi psem a vlkem", poprvé znovu hrál divadlo ve stejnojmenné inscenaci v Rokoku. Dabuje, hraje v Minoru, v Labyrintu, ve Viole, se souborem Kašpar v Divadle v Celetné. V roce 1994 se dostal s představením na zájezd do Skotska. Při výstupu na bájnou horu krále Artuše vyjel většinu sám, kupředu ho tlačili a zbytek vynesli na ramenou. Takhle teď vystupuje na mnoho z vrcholů svého života.

"Lidé kolem vás na tom ze začátku nejsou o moc líp. Vy nevíte, co se sebou, oni nevědí, co s vámi. Přitom je klíč jednoduchý: normální partnerství. Pomáhat jen v tom, v čem si nepomůžu já sám."

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