

# Necrosis is gone, much skin is preserved!

With brush, water knife or enzymes large burn wounds are cleaned thoroughly

51 Medical congress of the Regional Chamber of Doctors in North Württemberg

**STUTT GART, Germany** - Is it sufficient to brush off the skin in the burn bath? Is it enough to peel off epidermis layers tangentially? Or is a deep necrotomy required? With these decisions the physicians determine the later life quality of their patients.

When the victim of a burn accident arrives at the specialised centre, first life saving measures and anaesthesiological cabling are performed, then the acute wound treatment, explains Dr. **Fabian Medved** of the BG accident clinic in Tübingen, Germany. Depending on the area and depth of the trauma, different methods will be used.

The first measure is often the brush debridement in the burn bath. Brushing off the blisters is often all that is needed in the case of grade IIa burns. If after the therapy the wound base is vital and well circulated there is no need for further debridement. If the colleagues see



▲ The wound base of a grade IIa burn is vital after brush debridement and well circulated.

that there are many white areas after brush debridement, i.e. in the sense of a grade IIb till III burn - a further - surgical therapy is required.

### Peeling off skin gently with water jet

With grade IIb burns, parts of the epidermis and the dermis have to be removed tangentially. For this, the colleagues in Tübingen, often use the Versajet® system. This hydrosurgical instrument works like an oral shower, explained Dr. Medved. The destroyed tissue is peeled off gently with a hard water jet. Like this, as much dermis as possible can be kept, because 'dermis means life quality'.

A new, even more gentle method, comes from Israel: the enzymatic debridement with highly concentrated enzyme made from pineapple extract (Bromelain). This proteolytic digestion of the eschar is said to be even more precise than the hydrosurgery and removes only the necrotic tissue. There is the hope to maintain even more dermis, says the referent.

The enzymes are mixed and the paste is then applied to the burn wound. Around that, a protective wall from Vaseline

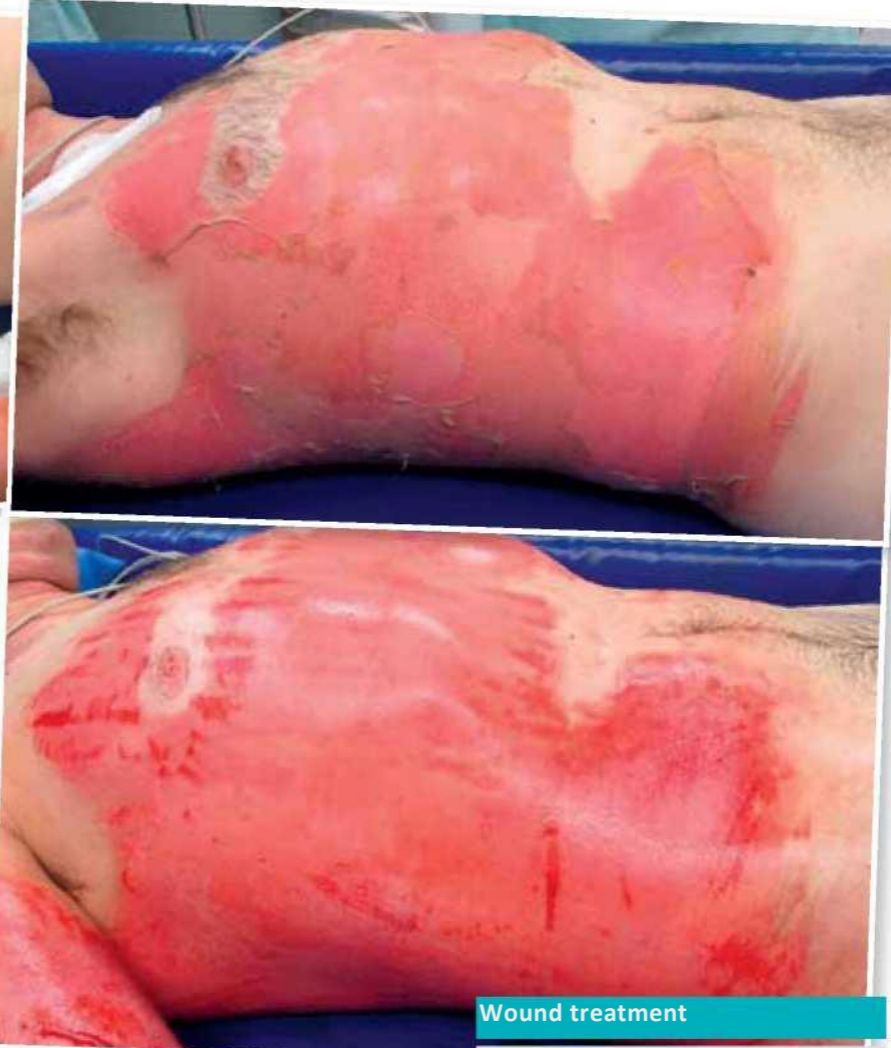
is built for the intact skin, before the whole is covered with a foil. In Tübingen, this method has shown good results. After digestion of the burn eschar a wound base remains where a split-skin graft can be placed. But in light of the limited clinical experience, there is still a lot of research work necessary, so Dr. Medved. Currently, this method is used for

- burns of grade IIb-III
- expansion over max. 15% of the body surface.

■ Patients 18 years and older  
During pregnancy, this enzyme procedure is not yet known. 'The use of the product (NexoBrid®) for the face is currently under focus of current research work and cannot be recommended clearly at the moment which can change soon', explained Dr. Medved to the Medical Tribune.

### With some luck excision and secondary seam are sufficient

For severe grade IV burns, the epifascial necrotomy is still preferred. This means to completely remove all skin layers and the subcutaneous fat layer till the muscle fascia is reached. Such an expanded loss of dermis brings severe restrictions for the patient if he survives the severe injury at all. Given the fact that Eschar contains



Wound treatment

In the case of a grade IIb burn the tangential necrotomy is performed e.g. with a water knife (below the state after treatment).

large quantities of burn poisons the surgeon has no other choice.

With some luck (e.g. on the ear) excision and secondary seam are sufficient. In the optimal case, the wound can be closed primarily.

After epifascial necrotomy the wound must be covered. This is often a problem with large burns, as there is not enough skin available. In such situations the vacuum therapy for bridging the time can help till enough split skin is available.

Furthermore, a polylactic acid product may be used for the treatment of dermal wounds. This skin replacement (commercial name: Suprathel®) achieves a significant

### temporarily:

- Fatty gaze
- Hydrocolloids
- Antimicrobial alginate dress.
- Skin replacement product
- Xenograft (porc skin)
- Allograft (cadaver skin)
- VAC therapy

### definitely:

- Split skin transplantation
- Cultured skin procedures
- Flap surgery

pain reduction and also helps to build a stable wound base.

The final wound cover is done by means of split skin grafts. By now there is the possibility to culture skin, e.g. for patients with burns over 80% of the whole body surface. For this, the skin samples must be sent to a special centre in Berlin which performs the replication. *Dr. Carola Gessner*

### Avoiding the compartment syndrome with cuts

During the phase of the exudation, the victims literally swell. With third grade burns, cuts often are required to provide some relief (escharotomy, fasciotomy). In the case of round injuries the relief help to avoid a compartment syndrome in the phase of the capillary leak and save the affected body part. Then maybe escharotomy is not enough - you have to cut deeper and to open muscle fascias.



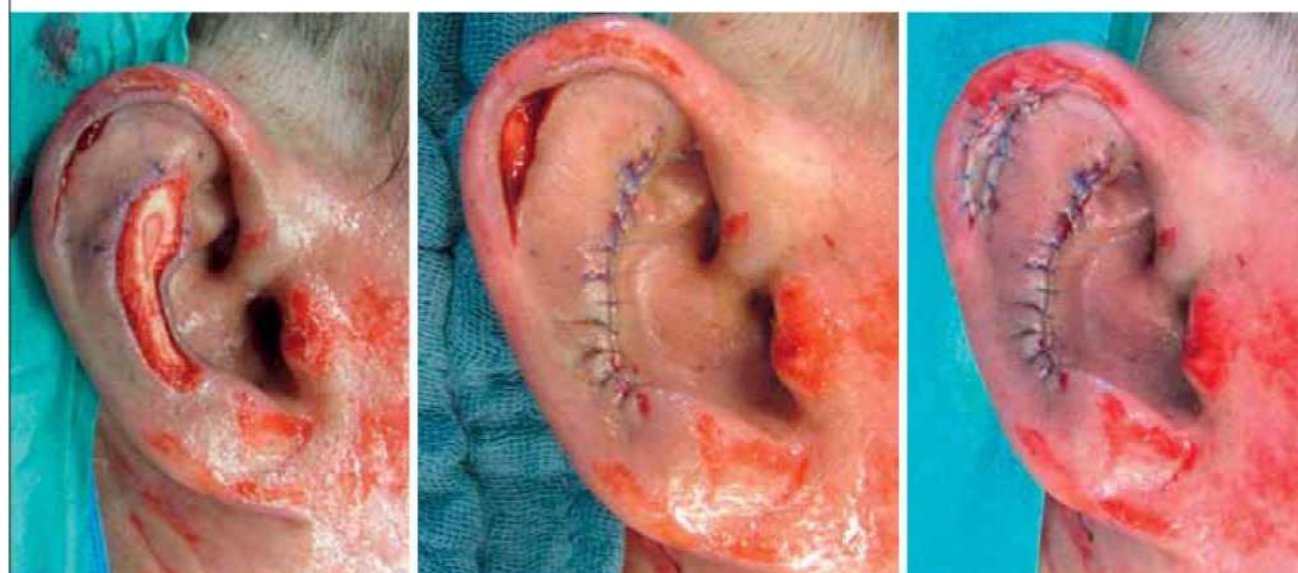


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Depending on the site, it is not necessary to sacrifice much tissue also after a third grade trauma. Here at the ear excision and secondary seam are enough. Pictures: BG Clinic Tübingen