

## Deep IIb Degree Dermal Burns Treatment – Comparing Xe-Derma® to Silver Sulfadiazine (SSD)

**Age:** 48  
**Sex:** Male  
**Etiology:** Acetone Vapour Explosion

### Introduction

Deep dermal wounds – IIb degree burns are the most complicated burn wounds from the healing point of view. Perfusion of the injured tissue is very limited; there is extensive interstitial oedema, the wound is easily infected and prone to secondary deepening. This Case Report compares the healing of a IIb degree burn under Xe-Derma® application to the standard method using an SSD antibacterial cream.

### Case Report

A 48-year old patient was admitted to a burn centre with IIb to III degree burns on 29% of his body surface area, caused by acetone vapours explosion during welding work. At the baseline visit, an area located on the left lower leg was assessed as a deep dermal burn (IIb degree). On admission, the wound was washed with iodine povidone (Betadine); after necrotic epidermis remains removal, it was divided into two identical parts. Antibacterial cream (Silver Sulfadiazine/Flamazine) was applied on the proximal part. The distal area was covered with Xe-Derma®. As outer dressing over Xe-Derma®, tulle gras and Furantoin-solution-soaked compress were used. The dressing was replaced on a regular basis in the operating room. Xe-Derma® stuck firmly to the wound bed, and no replacement was necessary; only the outer antiseptic dressing was replaced. The antibacterial cream was replaced every 24–48 hours. After 9 days, the distal area covered with Xe-Derma® has spontaneously fully healed. Even though the proximal part of the wound area showed signs of spontaneous epithelisation, the area was fully and finally covered only on Day 18. antibacterial cream (5mm layer) was applied 8 times, Xe-Derma® only once.



**Fig. 1: Admission**

On admission, the wound on the left lower leg was assessed as a deep dermal burn (IIb degree)



**Fig. 2: Dividing the Wound Area**

Proximal Part: Treatment with SS antibacterial cream (Flamazine®). Distal Part: Xe-Derma® dressing



**Fig. 3: Outer Dressing**

On the Xe-Derma®-covered part, tulle and Furantoin-soaked compress were used as outer dressing; the proximal part was covered with a layer of antibacterial cream

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## Discussion/Conclusion

Xe-Derma® is a suitable alternative to SSD treatment for deep dermal wounds. Thanks to its biological properties, it creates an optimal environment for keratinocyte migration and proliferation in the wound. Contrary to the standard treatment used for IIb degree burn treatment – silver sulfadiazine (Flamazine®), it was not necessary to replace Xe-Derma®. The healing was significantly faster, the healed area showed good mechanical resistance and also a better cosmetic aspect as compared to the part treated with the antibacterial cream.

**Total Treatment Duration: 9 Days**

**Total Number of Xe-Derma® Applications: 1**



**Fig. 4: Healing on Day 5**

Xe-Derma® firmly stuck to the wound bed, not to be replaced. Antibacterial cream regularly renewed on the proximal part.



**Fig. 5: Healing on Day 9**

The Xe-Derma®-treated area is well healed. Xe-Derma® is spontaneously peeling off the wound bed, while the Flamazine®-covered area is not healed yet, but showing signs of epithelisation.



**Fig. 6: Healing on Day 9**

After Xe-Derma® removal, the area is covered with delicate epithelium, the SSD-cream-treated area not healed yet



**Fig. 7: Day 18 after injury**

Both parts of the original wound area healed through spontaneous epithelisation. Clearly visible edges where Xe-Derma® had been applied



**Fig. 8: Discharge on Day 35**

Detail of the cosmetic result at the original Xe-Derma®/Flamazine® contact location