

Treatment of Full Thickness Burn Wounds with Enzymatic Debridement (Nexobrid®)

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Objective

Since its implementation of Bromelain-based enzymatic debridement (ED) in burn surgery, it became well-established as a safe method reducing excision area and necessity of autologous skin transplantation [1, 2, 3]. In the context of full thickness burns (FTBs), clinical data is sparse [1, 4]. We herein retrospectively report on our clinical experience with ED in acute FTBs and its local complications at the Burn Center of the University Hospital Zurich.

Methods

In this retrospective case series, all patients with FTBs treated with ED in the years 2018 until 2024 at the Burn Center of the University Hospital of Zurich were evaluated. We assessed wound healing, the need for further interventions. Furthermore, short-term as well as long-term complications such as infection and contractures were monitored. The amount of local complications was compared to patients with superficial and deep partial thickness burns (SPTBs/DPTBs) by fisher's exact test and paired t-test respectively.

Results

In total, 50 applications with ED were performed in FTBs on 42 patients (78% male, 22% female), the mean affected total body surface area (TBSA) was 38.56% (SD 38.56). The average abbreviated burn severity index (ABSI) score was 8.3 (SD 2.657). ED was applied in 48% of the cases very early (within 12 hours), in 30% of the cases early and in 22% of the cases delayed (>72h after trauma)[2]. 80% received autologous skin transplantation and, on average, 3.54 (SD 3.14) further surgical interventions were performed. Local wound infections occurred in 14 cases (see Table 1). ED was mostly applied on extremities, especially forearm and hands (see Fig. 1).

The debridement was efficient in most cases and followed by skin grafting. When compared to the group of patients with SPTBs and DPTBs, there was a significantly higher risk for wound infection ($p=0.0012$), a delayed healing time of >30 days ($p=0.0017$) and a higher amount of surgical revisions ($p=0.0003$). This, however, was expectable given the nature of a FTBs. In the next step, a comparison of FTBs after ED and conventional excision is planned.

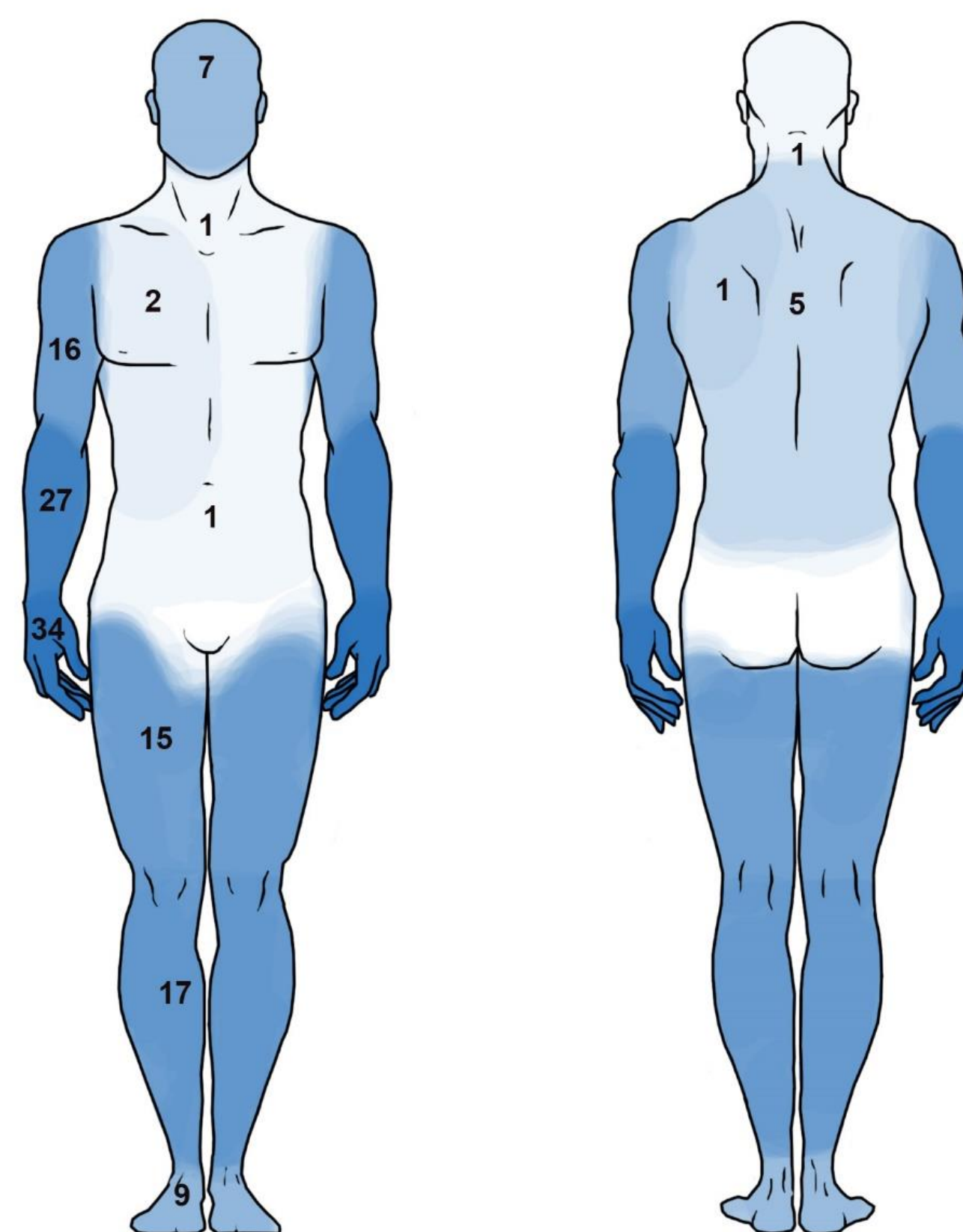


Fig.1: Amount of applications of ED in FTBs according to the anatomical area

| | n=50 applications of ED in 42 patients |
|------------------------|--|
| Age | 47.6 y SD 17.70 |
| Gender | 78% male, 22% female |
| ABSI | 8.3 SD 2.56 |
| Revised Baux Score | 93.11 SD 30.69 |
| TBSA | 38.56% SD 23.35 |
| BSA treated with ED | 11.8% SD 8.9 |
| FTB treated with ED | 6.1% SD 6.7 |
| Timing ED - Surgery | 4.0 SD 4.038 days |
| Local Complications | |
| Wound infection | 14 |
| Delayed healing (>30d) | 20 |
| Contractures | 9 |
| Nb. Of revisions | 3.533 |

Tab. 1: Demographic characteristics and local complications

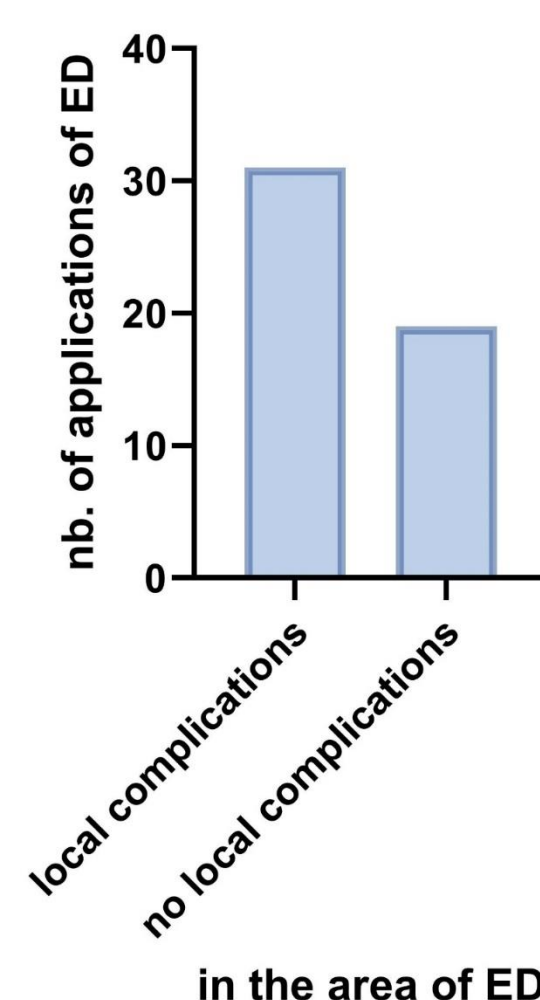


Fig.2: Number of local complications in the area of ED in FTBs

Conclusion

Enzymatic debridement is a well-established and safe technique in burn surgery and also useful in FTBs. To verify its value, a comparison to conventionally excised FTBs is needed.



Literature:
<https://www.mybib.com/b/q961mz>
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