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Case Report

Post-Burn Sceptic Limb in Epileptic Sudani Young Man

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ABSTRACT

Burns in epileptic patients are not uncommon, but it is difficult to manage in remote areas of third-world countries. Despite the reduction in burn injuries secondary to a seizure, such injuries still lead to significant morbidity and mortality. In Darfur, Sudan, we managed such an epileptic patient having a full-thickness burn endangering the limb and life. Since these patients should adhere to a specific medication, controlling it remains to be difficult. The patient was managed with serial debridement, dressings, antibiotics, anti-epileptics and a protein diet. Therefore, preparation for preventive strategies consists of lifestyle modification and patient education that is further warranted.

Keywords: Epilepsy, Burns, Split-thickness skin graft.

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INTRODUCTION

Epileptic patients are commonly encouraged to live a normal life as much as possible. The nature and incidence of the numerous types of injuries in epileptic patients are different from those that happen in people who do not have epilepsy.[1] It is well known that during seizure attacks, patients might have grave trauma like head and neck, thoracic and limb injuries and burns.[2] This risk is a significant aspect of dealing with such patients. Some epileptic patients pose a threat to themselves and others during the peri-ictal period.[3] There are no warning signs of seizures, leading to loss of consciousness and convulsions. Therefore, the relationship between epilepsy and burns is very clear, especially if the seizure occurs near the burning agent.[4] These patients should be promptly identified, given specific treatment and trained to prevent accidental attacks that may cause burns. Due to the lack of focus on time and location during the attack, the burn may be deeper, making it more difficult to treat.

CASE REPORT

A 23-year-old young Sudanese male has a history of 10% flash burn involving both his lower legs and feet. It was a mixed burn, partial at the lower legs and full thickness at the left heel area. The patient was a known case of epilepsy. He had an epileptic fit near a fire and had burnt both of his legs and feet. He was initially managed by traditional medicines by local quacks, which exacerbated the infection and condition becoming worse, causing septic limb endangering his limb and, eventually, his life. Clinging to hope, his parents took him to the civil hospital Kabkabiya, but the infection continued to spread, threatening his life, so local doctors advised below-knee amputation. In desperate hope, they came to the UNAMID team site in Kabkabiya, Darfur, Sudan, where they met the Pakistani contingent doctors on 25th November 2020, after 20 days of burn.

On thorough clinical examination, the patient was febrile; the rest of the general physical and systemic examinations were unremarkable. On local examination, an approximately 10 x 12 cm wound on the posterior aspect of the right leg and full thickness burn having an eschar on the left heal about 15x10 cm and on eschar excision revealed a deep spreading infection involving the heel and leg, exposing the Achilles tendon and part of the calcaneal bone (Figure-1).

Figure-1: Patient on Presentation

In Pak Field Hospital 12, he was admitted on humanitarian grounds. He was managed with meticulous serial debridement, dressings, I/V antibiotics

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according to culture, sensitivity, and analgesics to control the spreading of infection and pain. Immediate anti-epileptics drugs were started to avert further damage and halt the disease progression. Protein diet was started to improve wound healing. After controlling the sepsis wound granulation, the patient was advised to undergo a free flap procedure in a tertiary care hospital. Due to the far-flung rural area, financial constraints and the unpredictable security situation of Sudan, he needed help to avail himself of a tertiary care health facility. After thorough counselling and the probable outcome of the condition explained to the patient, serial dressings and antibiotics continued. His tendons and heel bone were exposed, making it difficult for him to recover quickly. A novel Vacuum Pack Assisted Closure method was applied to his exposed tissues, and we saw a remarkable improvement (Figure-2).

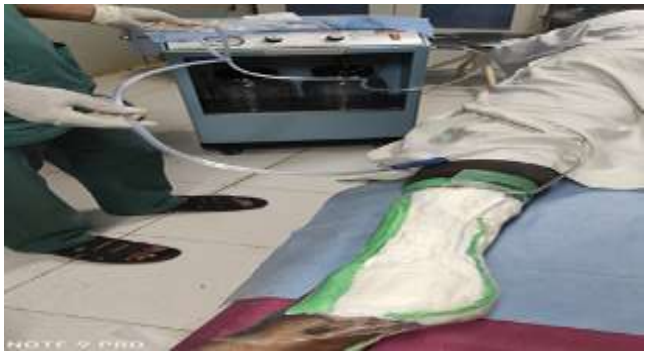

Figure-2: Vacuum Pack Assisted Closure

In limited resource conditions in remote areas, the skin graft was planned to expedite wound healing to save the limb. On a healthy granulated wound, a split-thickness skin graft was harvested from the contralateral thigh and placed on his left heel with aseptic measures (Figure-3).

Figure-3: Peroperative Photograph

The dressing was opened on the fifth post-op day with successful graft uptake. The patient was discharged on the sixth post-op day and called for follow-up. On the 14th post-op day, the second dressing (skin graft harvested site) opened with the healthy wound. For further follow-up, call for rehabilitation. With all this procedure, his limb was saved, and he could now walk and do his routine activities (Figure-4).

Figure-4: Photograph of the patient on Discharge
**Photograph taken after consent of patient*

DISCUSSION

Early excision and grafting are directly associated with enhanced survival rates in burn patients. For patients who are poor surgical candidates, surgery may be held in reserve for skin grafting alone, and surgical excision can be avoidable altogether.[6] The graft is placed on healthy and viable granulation tissue when the burn wound is reduced. Prior to graft placement, bedside debridement with wound care must be extensive and pain well-controlled. Surgical risks, delayed presentation, sepsis from burns with aggressive fluid resuscitation, sepsis with or without multiple organ failure and significant medical comorbidities are key factors in determining the schedule for excision and debridement in all patients.[7] Akhtar *et al*. Revealed in their series that this could be due to the majority of patients coming from rural areas and having a poor socioeconomic status, coupled with illiteracy and a longer contact time with the burning agent during the attack8. We came across such a poor epileptic patient in a far-flung area of Darfur, Sudan, who had post-burn infected wounds on legs and feet and was planned for below-knee amputation by local doctors. However, early serial debridement, vacuum-assisted closure (VAC) dressing, skin grafting, and proper nutrition saved precious limbs and lives. Previous reports have shown that the VAC dressing proved beneficial in burn patients for infection control, early wound granulation, and securing skin grafts9.

Several descriptions of the incidence of burn injury in epileptic patients account for 2-5% of total admissions to the burn units.[10] All those patients who have severe burns as a result of epileptic seizures require surgical interventions in the form of skin grafts, local flaps or below-knee amputation. Before grafting, the wound bed is cleaned, and necrotic tissue or eschar should be excised. The area must be debrided to bleed the wound bed to encourage optimal graft survival. When the graft has been fixed in place, it has been dressed with a suitable dressing, such as an impregnated gauze or silicone dressing. Split-thickness skin grafts naturally adhere to the recipient wound bed 5-7 days following graft placement. Consider immobilization to diminish graft movement and friction for skin grafts placed on extremities. Care must be taken not to firmly wrap initial dressings circumferentially around the burns.

Burn-in epileptic patients should be categorized as a 'high-risk group' because of the abrupt and unexpected attack of epileptic fits, which lead to altered consciousness and inadvertent burn injuries. Even though superficial burn injuries can be treated by conservative measures, deep burn injuries need surgical management. We believe that in the care of complex burn patients, the possible below-knee amputation or free flap surgery can be avoided, especially in deep-infected burns, by using early serial debridement, topical negative pressure and skin grafting.

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