

大面積燒燙傷植皮術後使用NewEPI促進表皮化的成效: 病例報告及文獻回顧

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The effects of NewEPI for re-epithelization of major burn with MEEK grafting: Case report and review of literature

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ABSTRACT:

We presented a case of with second to third degree flame burn involving bilateral upper and lower limbs, shoulders and neck, over than 20% TBSA, underwent initial escharotomy and multiple debridement and reconstruction with skin grafting technique. The burn wound was treated with either MESH or MEEK technique due to inadequate providing of donor sites. We used MESH for joint coverage due to difficult immobilization. However, the wound covered with MEEK grafting was healed slowly in 11 days compared with MESH. The new technology using EGF derived hydrogel dressing was known as New-Epi, which was used in our case for poor healing of MEEK grafting recipient sites after 11 days of secondary healing, and achieved better outcomes.

METHOD:

We compared and calculated un-healed area of flame burn wound covering MEEK grafting after use of New-epi on day 0, day 3 and day8/day 9. We selected left upper arm and forearm where covering the MEEK graft as denominator, and granulating tissue as un-healed part as numerator. Using Image-J application to calculate the percentage of unhealed to whole MEEK graft region.

RESULTS:

The unhealed wound was defined as granulating tissue, and the healed area was the re-epithelizing part according to the medical image recording by photography. On the day 0, the proportion of un-healing part to whole forearm covered with MEEK grafting was 98271/148710 pixel(66%), on the day 3 after using new-epi was 93483/150495pixel (62%) and on the day 11 (post new-epi day 9) was 49510/177374 pixel (28%). The flame wound under MEEK grafting and use of New-epi concluded 38% improvement in 11 days. Post-MEEK grafting (1:4), we assumed the proportion of un-healed and healed as 75%, on the day 6, we calculated 513864/669900 pixel (76.7%) and on the day 11, 329256/651966(50.5%) was measured. Therefore, decreasing of wound area was about 25% in 11 days post MEEK grafting. The upper arm wound area after using New-Epi was found 354482/762486 pixel (46.6%) in day 0, 234418/616187 pixel (38%) in day 3 and 49713/560192 pixel (8.8%) in day 8. In comparison, the day 0 post initial MEEK grafting was assumed 75%(MEEK 1:4), and on the day 11, was 354482/762486 pixel (46.6%). The ratio of with/without New-Epi was 1.33 (37.8%/28.4%). The healing time/unhealed area of MEEK recipient site was decreased in our case without evident side effects or other complications.