Case Study on Use of Harvested Fresh Amniotic Membrane Graft Over Superficial Partial Thickness Facial Burns

Dr. Vibhor Gupta,
PG Resident, Department of General Surgery, Government Medical College, Surat

Dr. Arpit Prajapati,
PG Resident, Department of General Surgery, Government Medical College, Surat

Dr. Sandeep Kansal,
Additional Professor, Department of General Surgery, Government Medical College, Surat

Abstract:

Burns continue to be a devastating emergency that causes numerous physical and psychological impairments. Its significance for public health is demonstrated by the fact that bacteria are major contributors to nosocomial infections that cause septicaemia and death in burn patients.(1) Burn injuries are classified based on a variety of variables, including depth, aetiology and percentage of body surface area injured. The degree of burn injuries is determined by a combination of the classifications listed above. Burns can be classed as "partial-thickness" or "full-thickness".(2) If the damage is restricted to the epidermis and the outer part of the dermis (a superficial partial-thickness burn), with the majority of the appendage structures intact, recovery will be quick (10-14 days) and the risk of scarring is low. If, on the other hand, the burn reaches deeper levels of the dermis, causing more tissue damage, the epithelium will take longer to repair (3-6 weeks) and there is a high risk of hypertrophic scarring.(2) Full-thickness burns cause the destruction of all layers of skin and usually require surgical intervention.(2) In the classic approach, the treatment of burn is via daily washing of the wound, removal of the dead tissue and antibiotic dressing until the formation of granulation tissue and then grafting.(1) The treatment of burn wounds remains one of the most difficult problems in medicine. The fundamentals of burn treatment include early debridement and skin transplantation. (3) Following successful debridement, synthetic or biological dressings are used to cover burn wounds until definitive skin grafting is achieved. To prepare the tissue for definitive coverage with skin grafts, this temporary covering of the wound bed allows the tissue to re-epithelialize in a better way. (3) Amniotic membranes (AMs) are a novel solution to the substandard temporary covering of burn wounds that has been used up to now. The amniotic membrane's biological characteristics could lead to improved scar quality and quicker healing.(3) Several mechanisms have been proposed to explain the unique positive benefits of the amniotic membrane. The main components of the amniotic membrane are the stroma and the spongy layer, which both contain significant regenerative factors and molecules; the basal membrane, which is composed of extracellular matrix proteins like collagen and fibronectin; and the epithelium, which is thought to be a reservoir of biologically active pluripotent

stem cells.(3) It has been demonstrated that these elements facilitate the maintenance of the initial epithelial phenotype while inducing the proliferation, migration, and differentiation of epithelial cells. (3) Furthermore, the amniotic membrane has little or no antigenicity. This grants these allografts, an immune privileged status(3)

Keywords:

Partial-thickness burns, conventional dressing, biological dressing, amniotic membrane, pluripotent, immune privileged, Lund and Browder's chart, GRADES Clinical score.