



Editorial

Md. Abdul Quader

"Reviving Hope: Amniotic Membrane Transplantation in Chemical Ocular Burns"

Ocular trauma is one of the major causes of vision loss. Of them, chemical injury is a true ocular emergency. Exposure to strong alkali or acid results in damage to the ocular surface epithelium, cornea, anterior segment and limbal stem cells leading to mild to severe impairment of vision, cosmetic disfigurement and even loss of eyeball. The intricate structure of the eye, with its delicate tissues and sensitive structures, makes the management of these burns incredibly challenging. Traditional treatments, including lubrication, antibiotics, and anti-inflammatory agents, can only provide limited relief. For more severe cases, surgical intervention becomes imperative. However, in recent years, a promising ray of hope has emerged in the form of Amniotic Membrane Transplantation (AMT), offering a new lease on sight and quality of life for those affected.

Amniotic membrane, derived from the innermost layer of the placenta, is rich in growth factors, cytokines, and extracellular matrix components. These biological properties make it an ideal material for ocular surface reconstruction. When transplanted onto the affected eye, AMT helps in several crucial ways: (a) Anti-inflammatory Properties- AMT reduces inflammation in the damaged ocular tissues, preventing further deterioration, (b) Promotes Healing- growth factors within the amniotic membrane accelerate the healing process, aiding in the regeneration of healthy ocular tissue, (c) Pain Relief- AMT alleviates pain and discomfort associated with chemical burns, improving the patient's quality of life, (d) Reduces Scarring- by minimizing scar

tissue formation, AMT preserves the transparency and integrity of the cornea, (e) Limbal Stem Cell Protection- limbal stem cells, critical for maintaining the corneal surface, are often damaged in chemical burns. AMT provides a protective environment for these cells to regenerate.

Recent studies have shown encouraging results, with AMT leading to improved visual outcomes and reduced complications in patients suffering from chemical ocular burns. This innovative approach has the potential to revolutionize the management of these challenging cases.

In conclusion, Amniotic Membrane Transplantation is a beacon of hope for individuals grappling with chemical ocular burns. While the road to recovery remains arduous, this treatment offers a promising path toward healing, improved vision, and a better quality of life. As ongoing research and advancements continue to refine this procedure, the future looks brighter for those affected by these devastating injuries.

Prof. Md. Abdul Quader

Professor of Cornea & Academic Coordinator
National Institute of Ophthalmology & Hospital