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### RESEARCH ARTICLE

#### CONTRIBUTION OF DEHYDRATED AMNIOTIC MEMBRANE IN THE TREATMENT OF RECURRENT IMMUNOLOGICAL CORNEAL ULCER: CASE REPORT

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#### Abstract

The dehydrated amniotic membrane allowing easy and safe handling is an allogeneic tissue derived from amniotic membrane of human origin. It is used in the treatment of corneal ulcers, pterygia, symblepharons, and others. In our patient suffering from dermatomyositis under corticosteroids and presenting an immunological corneal ulcer, the use of the dehydrated amniotic membrane was beneficial with a functional improvement. This technique is easy, accessible and has many therapeutic indications in order to improve the therapeutic management of this type of patient.

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#### Introduction:-

Amniotic membrane transplantation is indicated in the reconstruction of the surface of the cornea and in the reconstruction of the conjunctiva after pterygium surgery, to reduce recurrences or after corneal perforation. Amniotic membrane comes in several forms: fresh, cryopreserved, and dehydrated. The devitalized and dehydrated amniotic membrane allowing easy and safe handling is an allogeneic tissue derived from amniotic membrane of human origin.

The purpose of this work is to demonstrate through our observation that dehydrated amniotic membrane represents an excellent therapeutic option in the treatment of immunological corneal ulcers.

#### Case report:

We report the case of a patient followed for deep immunological corneal ulcer occurring repeatedly and initially treated with autologous serum but without improvement (Figure 1).

This is a 68-year-old patient followed for dermatomyositis under corticosteroid therapy, with a history of corneal ulcer of the left eye with a dirty bottom 5 months before admission, having progressed well under treatment with fortified eye drops, agents wetting agents and oral antibiotic therapy with very slow healing that lasted 2 months, who presented to the ophthalmological emergencies for painful red eye in the same eye; the left eye. The examination on admission showed visual acuity in the eye concerned with hand movements, the examination found a deep marginal corneal ulcer of 10 mm/5 mm, Fluo +, the Shirmer test was 20 mm (reflex tearing), a good anterior chamber, a total cataract with an obstructed passage to the ocular fundus. Examination of the contralateral eye had objectified visual acuity corrected at 7/10 with on examination a diffuse superficial punctate keratitis, a Break up time at 5s, a Shirmer test at 9 mm and the rest of the examination was without particularities. The patient was initially put under surface treatment associated with local antibiotic prophylaxis without preservatives without

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clinical improvement, it was recommended to put a dehydrated amniotic membrane (Figure 3), in order to accelerate healing and for better clinical results. Ulcer healed and visual acuity improved from hand motion to 2/10 given corneal scar (Figure 4).

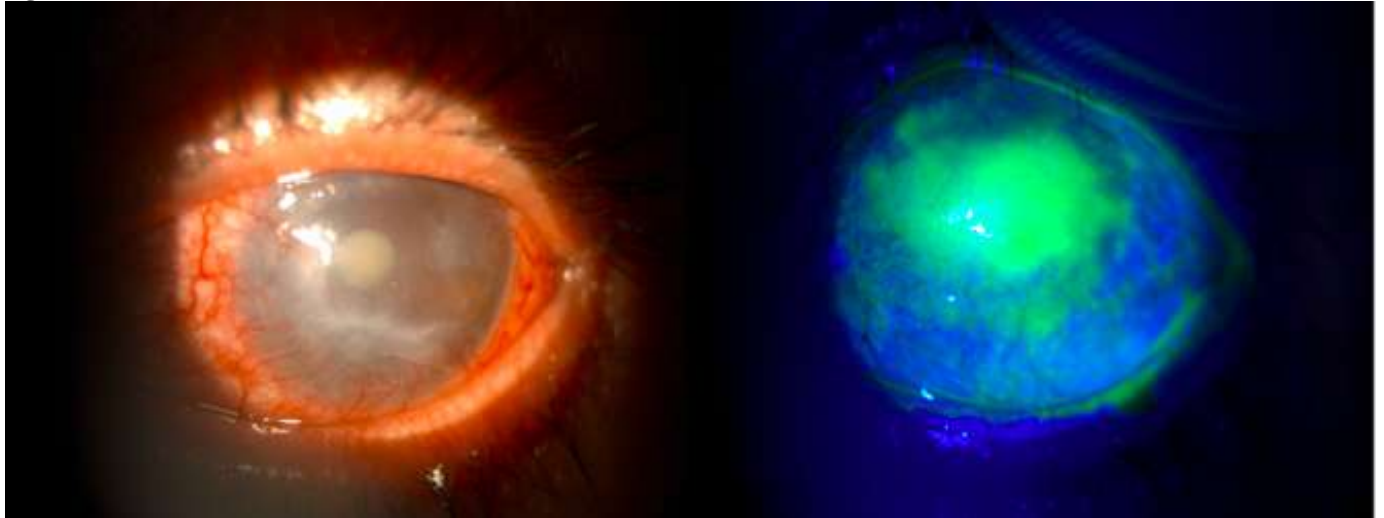
### Discussion:-

Human amniotic membrane transplantation (GMAH) involves grafting onto the surface of the eye an amniotic membrane removed during a caesarean section. It provides an avascular and acellular structure playing the role of basal membrane. It also provides growth factors limiting the chronic inflammatory phenomenon, corneal neovascularization and facilitating epithelial healing. It is indicated for chemical and thermal burns, ocular surface pathologies (symblepharons, post-ptyerygium excision graft, Stevens Johnson syndrome, etc.). When using fresh amniotic membrane grafts, immediate transplantation is often required; therefore, preservation techniques such as cryopreservation or dehydration have been used to increase storage time. A disadvantage of cryopreservation is that the graft must be stored and transported at  $-80^{\circ}\text{C}$ . On the other hand, dehydrated amniotic membrane is a better alternative since it is stored at room temperature, can be used in a medical office without having to resort to an operating room, and guarantees post-operative visual comfort. It can be used in two ways: "INLAY" grafting technique; stroma down thus, the basal membrane of AD will act as a substitute basal membrane for the corneal epithelium to heal on its surface or "OVERLAY" patch technique, stroma up and epithelium down, the MA then plays the role of a dressing like that of therapeutic lenses. It can also be used in multilayer (filling technique) to ensure the filling of deep ulcers (descemetocoele, perforation, etc.).

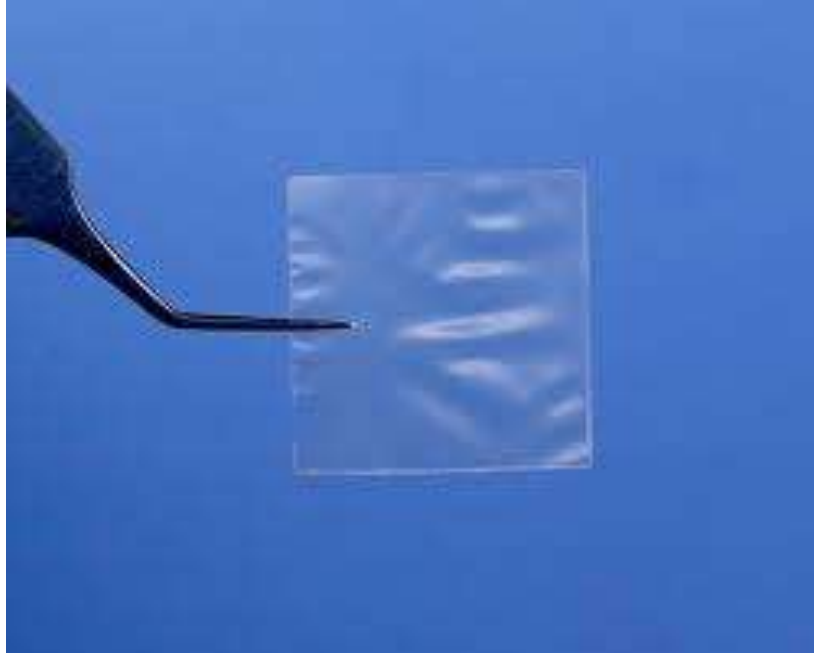
### Conclusion:-

Dehydrated amniotic membrane is an easily reproducible technique with many indications in order to improve the quality of life of our patients. Future research will continue to yield more information on the unique properties of the amniotic membrane allografts.

### Figures:



**Figure 1:-** Initial appearance of corneal ulcer before and after fluorescein test.



**Figure 2:-** Dehydrated amniotic membrane.



**Figure 3:-** Placement of the dehydrated amniotic membrane.



**Figure 4:-** Appearance three days after placement of the dehydrated amniotic membrane.

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