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Eye Regeneration and Healing with Amniotic Membrane

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If a person has suffered some tumor, ulcers, epithelial defects of the cornea and the conjunctiva, the treatment with amniotic membrane (MA) provides very satisfactory results to achieve the healing and reconstruction of the ocular surface in the short and long term. It is possible to opt for the use of the amniotic membrane, a medical-surgical procedure that is also used to increase the chances of success in some corneal surgeries, when there are cases with problems of tissue regeneration or scarring in the postoperative period. The amniotic membrane is used since the 40s in ophthalmology and is the innermost layer of the placenta, which is obtained in deliveries performed by elective cesarean sections. Prior to obtaining the placenta - the written authorization of the mother is needed and the same protocol for the donation of other tissues is carried out. "It is an essential requirement to avoid possible transmission of infectious diseases in the recipient and other complications" .. MA deflates and heals.

The amniotic membrane (MA) It is a resistant tissue, transparent, thin and rich in collagen that lines the placenta, in the period of fetal development, very similar to the skin. It is formed by three layers: epithelial, basal membrane and stromal matrix. "The basement membrane facilitates the migration of the epithelial cells responsible for the differentiation and proliferation of cells of the corneal surface and inhibits their death." Amnio is of fetal origin and becomes the inner layer. Its outer surface is composed of connective tissue and epithelial cells. "Amnio alone does not provide stem cells, but allows proper reproduction and migration of epithelial cells, meaning that the amniotic membrane acts to promote reepithelialization of the cornea and releases substances with great anti-inflammatory power, promotes healing, reduces

the production of fibrosis and the formation of new vessels on the ocular surface ".

How does it work?**The use of the amniotic membrane can heal in two ways**

- As a graft, that is to say placing the basement membrane upwards to produce a growth of the epithelial tissue above the MA, restoring the ocular surface.
- By coating placing the basement membrane down to reduce the inflammatory process, favor re-epithelialization and decrease the healing process under the membrane.

It is currently used successfully in ocular surface surgeries.

Corneal reconstruction

Recurrent corneal erosions, corneal ulcers, perforations, bullous keratopathy and persistent epithelial defects.

Conjunctival lesions

pterygium, epithelial tumors, damaged blisters in glaucoma surgery.

Healing ocular lesions

Symbéfaron, deficiency of stem cells, scleromalacia, reconstruction of the cul-de-sac, band keratopathy, temporary coating and in the treatment of chemical ocular burns.

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Conflicts of Interest

No conflicts of interest.

