186. AMNIOTIC MEMBRANE TRANSPLANTATION OVER TECTONIC EPIKERATOPLASTY IN THE MANAGEMENT OF CORNEAL ULCERS: ADVANTAGES AND LIMITATIONS

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Introduction. The human amniotic membrane (AM), which has a wide range of useful effects (activation of epithelization, suppression of inflammation and scarring, inhibition of angiogenesis), is successfully used to treat eye burns, corneal ulcers, bullous keratopathy, persistent corneal erosion, Stevens-Jones syndrome, pemphigoid, recurrent pterygium, symblepharon, etc. Low immunogenicity and the possibility of preserving the membrane further expanded its clinical use. AM can be used as a surgical transplant, in which the membrane is integrated into the host tissue, as well as a biological dressing, in which the membrane temporarily lays on the surface of the eyeball. In this paper we aim to evaluate AM's efficiency in the management of corneal ulcers when compared to a well established treatment method, such as the tectonic keratoplasty.
Aim of the study. To compare the results of tectonic epikeratoplasty (TEK) and amniotic membrane transplantation (AMT) in patients with corneal ulcers and to assess the advantages and limitations of AMT in the management of ocular surface impairments.
Materials and methods. 210 patients with progression of corneal ulcers or perforated ulcers were treated during the period of 2015-2019: 96 patients were operated with TEK and 114 patients - with AMT. In TEK, a complete cornea with adjacent scleral rim was fixed upon the recipient eye by scleral sutures. In AMT, a multilayered amniotic membrane fragment was attached to the corneal surface by conjunctival sutures - patch technique - which means that the AM was used as a temporary dressing. The AM was prepared from fresh placentas of seronegative donors and stored at -80 ° C.
Results. The integrity of the corneal surface was restored in 75% (n = 72) cases in the TEK group and in 59,6% (n = 68) cases in the AMT group. Corneal vascularization after graft removal was increased in 69,8% (n = 67) of patients with TEK and 40,35% (n = 46) of patients with AMT. In the TEK group, the procedures were repeated in 19,8% (n = 19) of patients, and 6,25% (n = 6) of them had penetrating keratoplasty eventually, as opposed to 33,3% (n = 38) and 5,26% (n = 6) respectively in the AMT group.
Conclusions. Although the AM could be used as a first step measure to maintain ocular integrity, in many cases further surgery is needed for ocular surface reconstruction, as the AMT isn't effective enough if severe stromal thinning and impending corneal perforation are involved. Nevertheless, while TEK is more effective in restoring corneal integrity, AMT has a number of advantages: less complexity and duration of surgery, low antigenicity of the graft and availability of transplanted material. Both methods can be used as intermediate measures before further ocular surface reconstructive procedures can be performed.
Key words: amniotic membrane transplantion, corneal ulcer, epikeratoplasty.