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Titel des Beitrags: Amnion Cells Engineering: A New Perspective in Fetal Membrane Healing after Intrauterine Surgery?

Abstract: In this study we aimed to set up an in vitro culture of the rabbit amnion in order to support in vivo fetal membrane healing capacity following fetoscopy. Fetal membranes were collected from a mid-gestational rabbit, and cultured on collagen support material for 14 days. 34 rabbits at 22–23 days gestational age (GA) underwent fetoscopy. The entry site was randomly allocated to 4 closure technique study groups: group I, human amnion membrane (n = 23); group II, collagen foil (n = 16); group III, collagen plug (n = 19), and group IV, collagen plug with cultured amnion cells (n = 19). In all groups membrane access sites were additionally sealed with fibrin sealant, and the myometrium was closed with sutures. Fetal survival, amnion membrane integrity, and the presence of amniotic fluid were evaluated at 30 days GA. Cultures showed good survival in the collagen support material. Increased cellularity, survival and proliferations were observed. The amnion at the access site resealed in 58–64% of cases in groups II–IV, but none of the tested techniques was significantly better than the other. Histological examination indirectly revealed the anatomic repair of the membranes, since no entrapment of the membranes could be demonstrated in the myometrial wound.

Stichworte: Fetoscopy; Fetal membranes; Premature rupture of membranes;