Cell transplantation for a CSF-fistula: Experience with fibringlue and fibroblasts. [German]

Authors: Wolf G., Plinkert P.K., Schick B.

Publication Date: 2005

Abstract:

Background. In the present study we investigated the culturing of fibroblasts on fibrin glue embedded suture nets, to analyse the possibility of using these components in a suture application technique for the closure of a CSF-fistula. Results. Placement of centrally perforated dura pieces on fibrin glue coated surfaces resulted in cellular migration from the dura borders into the defect, resulting in a complete cellular closure of the perforation. Inversion microscopic follow-up during culturing and the Alamar blue-essay found strong growth stimulation for oral mucosa fibroblasts on fibrin glue coated surfaces by insulin and FGF. Three-dimensional fibroblast growth was observed along the suture lines in the presence of fibrin glue. Conclusions. Fibrin glue is an attractive extracellular matrix for cellular migration from the dura which is suited to fibroblast culturing in suture nets. Our findings support the idea of achieving closure of cerebrospinal fluid fistulas by suture application of autologous fibroblasts and fibrin/thrombin preparations as a realistic future goal.