Study of the Inflammation Reaction in Brain Tissue Transplant
Guan Hua Zhong, Wang Hui Xing
Department of Anatomy, Xing Jiang Medical College, Urumqi, 830054

The authors transplanted the entire layer of cerebral cortex of the E15 wistar fetal rat into area 3, 1 and 2 of the wistar adult rat cerebral cortex. Samples were taken on post-transplant day 21, 30, 60, 90 and stained with Nissl, Ptah, Weil methods. Observations: In the graft transplanted after 21 days there was very strong inflammatory reaction, with capillary blood vessels dilatation, macrophages appeared in the transplant. In the cytoplasm there were engulfed erythrocytes and other necrotic tissue, granulocytes were seen. There were marked protrusions in the small gliocytes, cytoplasm was stained deeply. Karyoplasm was lightly stained. In the matured transplant, neurons concentrated in the transplant near the hosts' brain tissue. This area had good blood supply, the proportion of various neuron was normal, differentiation and development were good. Deformed cells in neuron had a higher occurrence rate in position where inflammatory reaction had occurred, deformed neuron often lacked normal dendrites or with reduced dendrites, some nissl's bodies in the cytoplasm showed fine granular shape or thick shrinking into mass. Glial cells: In the 21 days transplant, there were small glia; cells occurring in region where inflammatory reaction had took place. In the other maturation stages of transplant tissue there were no morphological abnormal glia. In the 90 days transplant, there were cord-like or fascicular nerve fibers, penetrating the scar tissue at the junction area of the transplant and host brain tissue. Amongst them, a lot of nerve fibers of the transectioned host corpus callosum grew into transplant. Single section and 3-dimensional reconstruction all showed that the fused area of the transplant and host brain tissue comprised of about ⅓ of its contacting surface. There was scar formation in the fused area. Capillary blood vessel cross section could also be seen at the junction area of the host brain tissue and transplant. Light inflammatory reaction might facilitate the differentiation and development of the transplant nerve. Serious inflammatory reaction might cause obstruction of the migration of the transplant neurons, without stratification, neuron with abnormality occurred. Severe inflammatory reaction might cause gliosis, and formed scars.