[Experimental study of aneurysmal occlusion with fibrin glue]. [Japanese]

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Abstract:

The authors report an experimental trial of intra-aneurysmal occlusion using fibrin glue. Nowadays, with the development of microsurgical techniques and aneurysmal clips, results of direct radical operations have been improving. But quite a few aneurysms cannot be clipped because of their size, location, broad neck etc. Some authors have treated these aneurysms with innovative techniques (detachable balloon techniques etc). In these methods, the occlusive state of the aneurysms is not always obtainable because of the size of their neck. Besides, it is not always possible to preserve the parent arteries of the aneurysms. Experimental aneurysms in cervical carotid arteries of dogs are treated by direct injection with fibrin glue. During its injection, influx of fibrin glue was prevented by occlusion of the aneurysmal orifices with inflated polyethylene angioplastic balloons. The aneurysms which were completely (100%) filled by the injection of fibrin glue (100% infused group) were totally obliterated in 10 (71%) of the 14 cases. The parent arteries were completely preserved in all instances. Follow-up study demonstrated satisfactory maintenance of this occluded state in the aneurysms in the 100% infused group. In completely occluded cases, all aneurysms maintained this state. On the other hand, 1 of the 4 incompletely obliterated aneurysms recanalized partially. These occluded aneurysms were studied by a light microscope (LM) and a scanning electron microscope (SEM). At day 7 after the occluding procedure, the margin of the aneurysmal orifice was covered by a layer of fibroblasts. At day 21, almost half of the aneurysmal cavity had been substituted with connective tissue. The orifice of the aneurysms was covered with an endothelial layer.(ABSTRACT TRUNCATED AT 250 WORDS)