**Spontaneous Recanalization of Internal Carotid Artery Occlusions**

F. Sindermann, R. Brügel and H. Giedke

Section of Neuroradiology and Department of Neurology, University of Ulm, Germany (FRG)

Received: August 16, 1973

**Summary.** Three instances of spontaneous recanalization of internal carotid artery occlusion are presented. In the first case, extensive extra- and intracranial lesions including severe stenoses and prestenotic aneurysmatic dilatation were demonstrated by angiography. Gradual disappearance of these alterations was shown by control angiograms. In the second and third instances, complete or practically complete occlusions of the supraclinoid portion were found. Control angiograms showed complete recanalization which, in one of these cases, had occurred at least one year after the stroke.

**Introduction**

Spontaneous recanalization of intracranial artery occlusions is a frequent finding. It has predominantly been reported in middle cerebral artery occlusions (Sindermann et al., 1969) where it may occur within minutes (Diehlhaus and Voigt, 1969) but also after months. It is, however, much less common in occlusions of the great arteries of the neck, such as the internal carotid artery.

In the present article we shall present three cases in which spontaneous recanalization of internal carotid artery occlusions was demonstrated by angiography. In the first case, the lesion extended throughout the
major part of the artery but was not quite complete at the time of angiography, whereas, in the other two instances the lesion was confined to the supraclinoid portion and was complete in the first case, and practically complete in the second.

Case Reports

Case 1. The patient was a 43 year old man with a history of cardiac arrhythmia. He was admitted five days after a stroke with visual impairment of the left eye and with right hemiparesis and hemihypesthesia. These symptoms persisted for two weeks. 10 days after the stroke, left carotid angiography was performed (Fig. 1a, b). It revealed severe stenosis of the internal carotid in the sphenoid portion and moderate stenosis below the base of the skull. The extracranial carotid was contracted except for the carotid sinus which was maximally dilated so that a fusiform aneurysm was suspected. Control angiograms (Fig. 1c, d) were performed 4 days and 3 weeks after the first investigation. They showed gradual disappearance of the stenoses and of contraction and dilatation of the vessel as well, with slight persisting irregularities of the vessel in its extracranial portion.

Case 2. A 43 year old female had a stroke with persisting right hemiplegia and mixed aphasia, 2 weeks after she underwent hysterectomy. 12 days after the stroke, left carotid angiography (Fig. 2a) revealed complete occlusion of the supraclinoid portion of the internal carotid. A control angiogram 4 years later (Fig. 2b) was completely normal.

Case 3. A 50 year old female with rheumatic heart failure and absolute arrhythmia was admitted one year after a severe stroke with persistent left hemiparesis and hemihypesthesia. Right carotid angiography (Fig. 2c) showed subtotal occlusion of the supraclinoid portion of the internal carotid with only traces of contrast material reaching the orbitofrontal branch of the middle cerebral artery. A control angiogram 2 years later (Fig. 2d) revealed complete recanalization.

Discussion

In the majority of stroke patients, angiography fails to demonstrate the lesion, especially when the investigation is not performed immediately after the stroke. One of the reasons for this failure is recanaliza-