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Opinion Open Access

Early Spontaneous Recanalization of Internal Carotid Artery Occlusion

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Opinion

A 70-year-old male was admitted with a history of malignant disease diagnosed 3 years before. Two days after admission the patient became confused and presented with right-sided weakness and aphasia. Color-coded duplex ultrasonography of the cerebral vessels was immediately performed showing occlusion of the origin of the left internal carotid artery (Figure 1A). About 30 minutes later the patient showed spectacular shrinking deficit, and color-coded duplex ultrasonography of the cerebral vessels showed recanalization of the left carotid artery (Figure 1 B). CT showed no alterations in brain density. At follow-up after 7 and 30 days, color Doppler US showed persistent patency of the vessel lumen. The cause of this occlusion may have been cardiac embolism, plaque rupture with consequent thrombosis, vessel dissection with hematoma, embolism of paraneoplastic origin. Knowledge about dynamic vessel wall changes during the hyperacute phase of cerebrovascular diseases requires immediate neurovascular imaging and close follow-up. Detection of a cerebral vessel occlusion depends mainly on the time elapsed from clinical onset to the initial vascular evaluation. Several studies showed that early spontaneous recanalization infrequently occurs during the first few hours of acute stroke [1,2]. In the cerebral vessels examination color-coded duplex ultrasonography offers a clinical tool that can localize occlusion and detect recanalization in real time. It is non-invasive and low cost; furthermore it allows study of hemodynamics at the patient's bedside and follow up investigations are easily possible [3].

Figure 1A: Extracranial duplex, longitudinal plane (B-mode image): the narrowed lumen of the left carotid internal artery is completely filled with moderately echoic material.

Figure 1B: Extracranial duplex, longitudinal plane (B-mode image) 30 minutes later: spontaneous recanalization of the left carotid artery.

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