

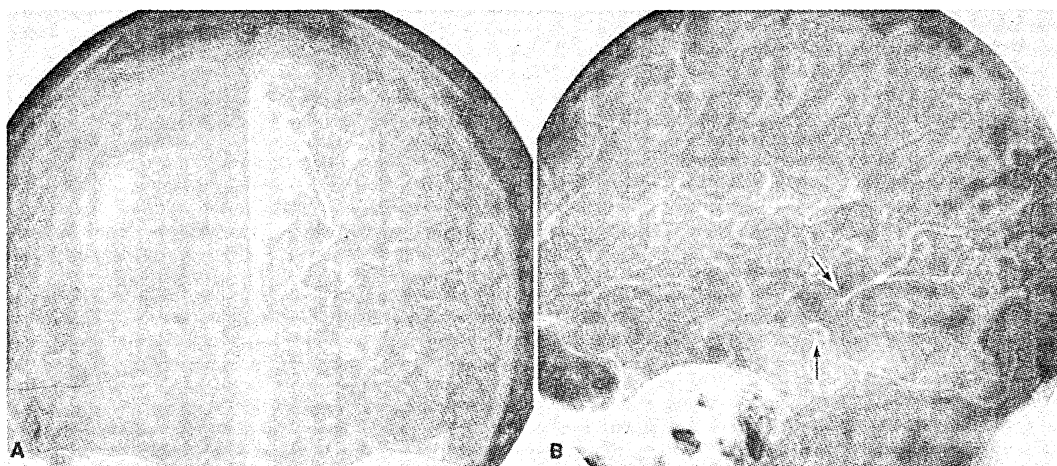


Fig. 4. *Posterior Cerebral Occlusion Diagnosed by Visualizing Collateral Circulation:* A 21-year-old woman, who had a long history of episodic bitemporal headache, had taken contraceptive pills for two and one-half years. Several days before admission she awoke with a headache which continued and became progressively worse. This was then followed by dysesthesia of the right hand and mild dysphasia. She was found to have hyperreflexia of the right upper extremity, slight blurring of the margins of the optic disks, and a highly congruous right homonymous hemianopia that was more dense in the superior quadrants.

The left carotid angiogram disclosed no abnormality in the arterial phase (the posterior communicating and posterior cerebral arteries did not fill). In the later phases of the angiogram (A and B), however, there was retrograde filling of the internal occipital (upper arrow) and temporo-occipital (lower arrow) branches back to their origins from the posterior cerebral artery.

early postpartum period, and this case is considered to be hormone-related. In the two years compared, the number of young women having angiography was almost the same, the variety and incidence of non-occlusive lesions were similar, and there was only one case of occlusion during each of the years that was not hormone-related.

Among the 8 patients observed, the median age was thirty years; 5 patients were in the twenty- to thirty-four-year age group while 3 were in the thirty-five-through forty-four-year age group. The average duration of use of oral contraceptives was sixteen months. One patient had taken medication for two and a half years; 2 patients had been on medication less than one year, the shortest time being four months.

Angiographically, in 5 of the cases the middle cerebral artery was implicated. In all but one, branches of the middle

cerebral artery were involved with the main trifurcation occluded in one case (Fig. 1). Interpretation of occlusion was on the basis of visible blockage of an arterial lumen with distal avascularity, localized luminal narrowing with slow arterial filling, and emptying and retrograde filling of branch arterial vessels (Figs. 2-4). In two instances the posterior cerebral artery or one of its branches was occluded. One case involved evidence of retrograde opacification, while in the other there was slow flow from the proximally deformed but opacified channel. In another patient, the pericallosal branch of the anterior cerebral artery was occluded, and filling of the area occurred by way of collateral channels from the posterior cerebral artery. In one of the cases, a positive mercury-197 brain scan was obtained over the area of the middle cerebral artery two weeks after the onset of hemiparesis and aphasia. A

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Fig. 3 (cont.) A bilateral brachial angiogram revealed a 2.5 cm portion of the parieto-occipital branch (arrow) of the posterior cerebral artery that exhibited irregular margins due to segmental narrowing but showed slight overall dilatation (A and B). Stasis is evidenced by opacification of the segment lasting into the intermediate and venous phases of the angiogram (C and D). The last film demonstrates filling of small branches and a cloud of contrast material around it. The findings suggest arterial recanalization in this portion of the area of infarction. The frontal films (E and F) show the involved segment of the parieto-occipital branch coursing in its fissure (arrow).