

Thromboembolic stroke in ICA stenosis

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A 74-year-old man with right-sided amaurosis fugax had an ultrasound examination revealing right internal carotid artery (ICA) stenosis (figure 1, A and B). Angiography (figure 2A) showed a proximal ICA stenosis of approximately 90% according to NASCET criteria¹ and a distal thrombus. The patient was anticoagulated with heparin. Invasive treatment options were discussed, but 16 hours later the patient had a stroke (figure 2B), with left sided hemiplegia and hemineglect. The insult was caused by arterio-arterial thromboembolism rather than ICA occlusion, because follow-up ultrasound showed the right ICA still with the same high degree of stenosis (figure 1, C and D). In ICA stenosis, embolic cerebral infarction is usually ascribed to plaque rupture, and imaging often shows multiple emboli.^{2,3} In contrast, here the heterozygous factor V Leiden mutation (R506Q) may have contributed to thrombus formation in the post-stenotic artery.^{4,5}

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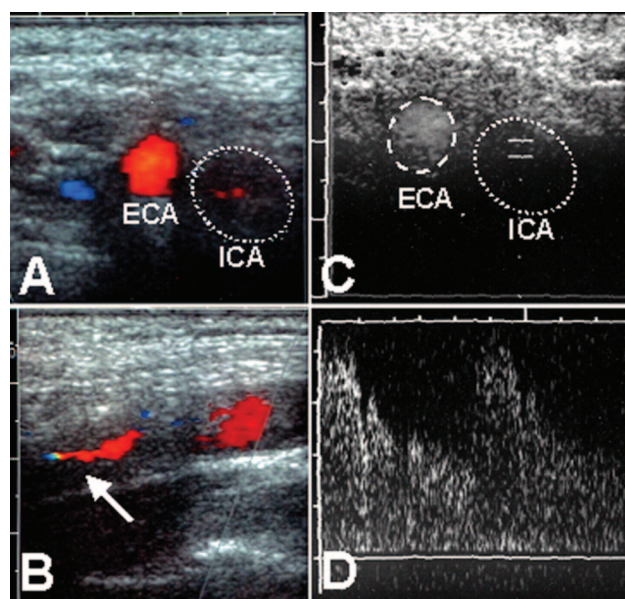


Figure 1. Ultrasound examinations. A, B, prestroke: cross (A) and longitudinal (B) sections showing only minute residual flow signal (red; arrow in B) in the right internal carotid artery (ICA) (10 kHz, maximal systolic velocity: >300 cm/second). C, D, poststroke: cross section (C) with flow measurement (D, >13 kHz, maximal systolic velocity: >200 cm/second, consistent with a 90% stenosis). The original ICA lumen is outlined with a dotted line in A, C.

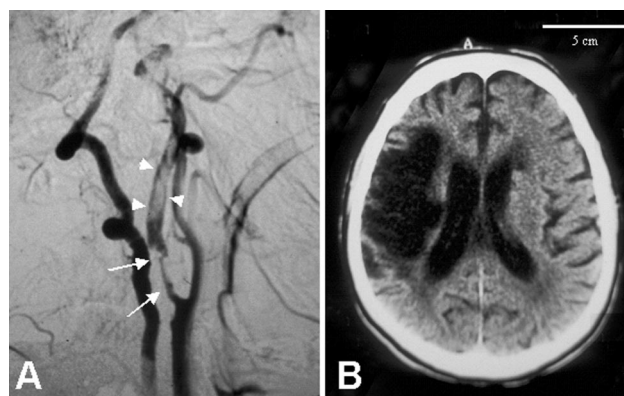


Figure 2. DSA (A) showing a 90% stenosis of the proximal right internal carotid artery (ICA) (arrows), and a thrombus located distal to the stenosis (arrowheads), occupying most of the ICA diameter. Cranial CT scan (B) 3 months later showing a large demarcated infarction of the right MCA territory (scale bar, 5 cm).

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