

Teaching NeuroImages: Facial swelling and intracerebral hemorrhage from venous hypertension in a dialysis patient

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Figure 1 Ipsilateral facial swelling in a patient with intracerebral hemorrhage



Left facial swelling (A) before and (B) 6 weeks after venous recanalization.

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A 56-year-old woman on hemodialysis through left arm arteriovenous fistula presented with headache, aphasia, and gradually worsening left facial swelling (figure 1A). MRI showed left temporal intracerebral hemorrhage with arterialized veins (figure 2, A and B). Cerebral angiography revealed multiple areas of venous flow reversal suggesting venous hypertension (figure 2C). Fistulogram demonstrated chronic left cephalic vein occlusion with outflow retrograde through the left internal jugular, facial, intracranial, and then centrally through right internal jugular veins. Recanalization of the venous occlusion improved facial swelling (figure 1B). Early recognition of facial swelling may prevent intracerebral hemorrhage in patients with arteriovenous fistula.^{1,2}

Study funding

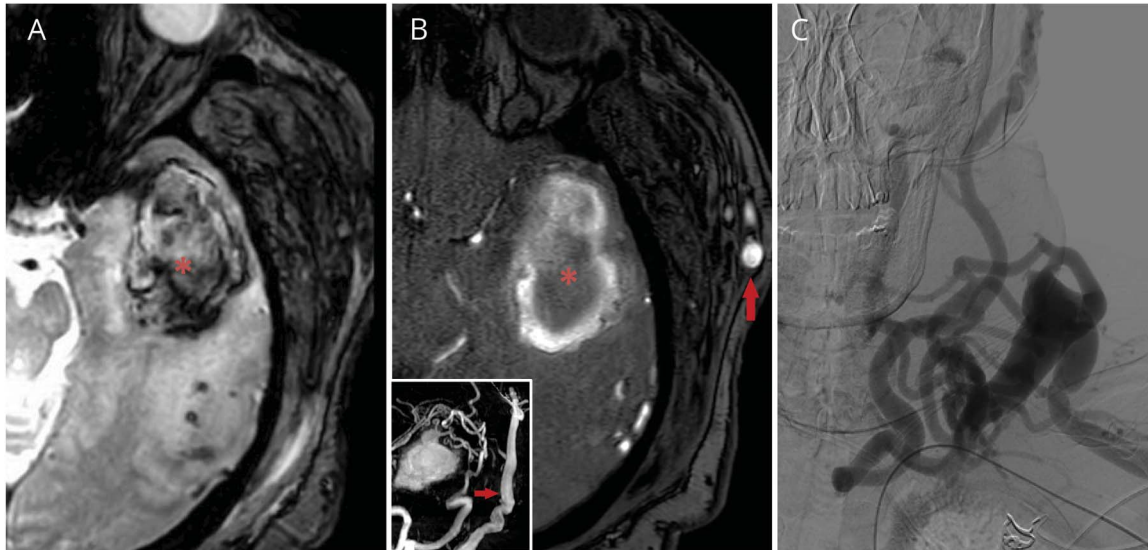
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Disclosure

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Figure 2 Left temporal hemorrhage with arterialized veins



(A) Gradient echo image shows acute left temporal hemorrhage (asterisk). (B) MRA of the head shows a large left temporal intracerebral hemorrhage (asterisk) and arterialized veins, including the left superficial temporal vein (arrows). (C) Network of abnormal veins in the left neck derived from the left cephalic, subclavian, and internal jugular veins due to proximal venous occlusion.

Appendix Authors

Name	Location	Role	Contribution
Ekaterina Bakradze, MD	Montefiore Medical Center, New York	Author	Designed and conceptualized the study; drafted the manuscript for intellectual content
Richard L. Zampolin, MD	Montefiore Medical Center, New York	Author	Major role in acquisition of data
Yosef S. Golowa, MD	Montefiore Medical Center, New York	Author	Major role in acquisition of data
Deepa Bhupali, MD	University of Illinois at Chicago	Author	Revised the manuscript for intellectual content
David D. Pasquale, MD	Kendall Regional Medical Center, Miami, FL	Author	Revised the manuscript for intellectual content
Ava L. Liberman	Montefiore Medical Center, New York	Author	Interpreted the data and revised the manuscript for intellectual content

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