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Dural arteriovenous fistula on the convexity presenting with pure acute subdural hematoma

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We read with great interest the article by Ogawa K, Oishi M, Mizutani T, Maejima S, Mori T. Dural arteriovenous fistula on the convexity presenting with pure acute subdural hematoma. Acta Neurol Belg. 2010;110:190-192. The authors described a patient with a pure acute subdural hematoma (SDH) caused by non-traumatic dural arteriovenous fistula (DAVF) on the convexity near the superior sagittal sinus (SSS). The DAVF was fed by the occipital artery and drained into a dural vein and a diploic vein. Angiography did not show retrograde leptomeningeal venous drainage (RLVD). We wish to provide further comment on the mechanism of hemorrhage in their patient. DAVF is a relatively rare condition that can cause aggressive neurological symptoms and intracranial hemorrhage due to venous hypertension. Although the bleeding rate of DAVF with RLVD is estimated to be as high as 1.8% per year, DAVF without RLVD rarely causes intracranial hemorrhage. We also previously reported an unusual case of SDH caused by DAVF without RLVD (3). In our patient, DAVF was fed by the bilateral middle meningeal arteries and drained into the SSS and the pterygoid venous plexus. We believed that the origin of bleeding was the leptomeningeal draining veins, and that these could not be revealed by angiography as they were obstructed at the time of bleeding. A review of DAVF on the convexity adjacent to the SSS indicated frequent occurrence of this lesion in the convexity, particularly in the middle third portion where venous lacunae often present (1). Additionally, venous lacunae receive the drainage of the dural veins and the cortical veins (2). Based on these findings, we suggest that the congestion of the cortical vein and the dural vein in the authors' patient was caused by DAVF on the convexity near the SSS, resulting in bleeding at the point just prior to where the cortical vein entered into the venous lacunae.

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