



## Two Basilar Fenestration Aneurysms Management - Image in Neurosurgery

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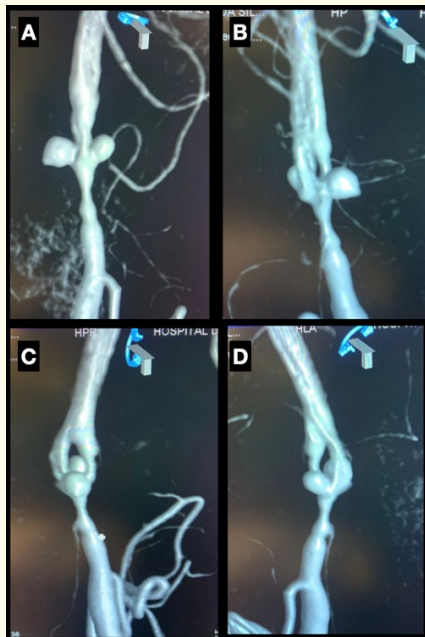
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The basilar artery (BA) is formed in its inferior aspect by the union of the paired longitudinal neural axis. Superiorly, the fusion from the caudal division from the primitive internal carotid artery leads to basilar tip and superior cerebellar arteries formation [1,2]. For this instance, a basilar fenestration occurs when, at any point in the length of BA, the fusion is not complete. It's more common at the lower end of BA, immediately superior to where the vertebral arteries join [1,2].

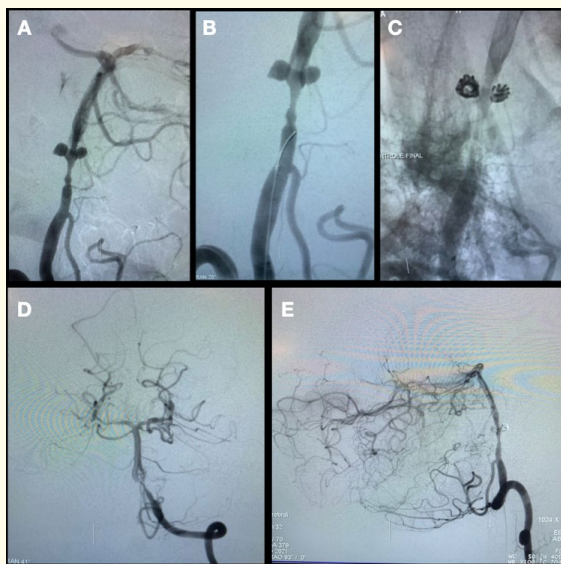
There are several reports in the literature regarding its prevalence, which is highly variable-from 0.6 to 5%-according to the technique used to detect this variant, be it magnetic resonance imaging (MRI), computerized tomography (CT), digital subtraction angiography (DSA), or autopsy [3-6]. And it happens more at the lower end of BA, immediately superior where the vertebral arteries join.

Even though it is an anatomical variant, It's known that it is associated with aneurysmal formation, mainly due to the whirling flow that occurs inside it. The reported prevalence of aneurysms and basilar fenestration is around 7% and they are especially saccular.<sup>4</sup> They can manifest by subarachnoid hemorrhage (SAH) or even through an ischemic event [2,7].

Here, we present a case from a 41-year-old male, who was admitted to our emergency care department with an intense headache that had begun 12 hours before his admission. He was a smoker and had blood pressure hypertension controlled by losartan. On his neurological exam, he was conscious, without any focal neurological deficit, but he had nuchal rigidity. A brain CT scan was performed and it showed a massive SAH modified Fisher grade III. Forward to this, we performed a DSA, showing two basilar fenestration aneurysms, localized in the inferior third of BA, oriented in a "mickey-mouse" aspect. (Figure 1). Due to its presentation with SAH, our team opted for embolization with coils in both sacs with satisfactory occlusion (Raymond Roy 1), with preservation of the branches of fenestration and no additional deficit (Figure 2). Our patient was forwarded to the intensive care unit for monitoring due to the SAH and was discharged after 14 days with no neurological deterioration or complication related to the procedure.



**Figure 1:** Multi-directional digital subtraction angiography (DSA) with 3D reconstruction showing two basilar fenestration aneurysms, localized in the inferior third of BA, oriented in a “mickey-mouse” aspect.



**Figure 2:** DSA images showing two BA fenestration aneurysms management. The aneurysms were successfully treated with embolization, using Guglielmi detachable coils, with preservation of the branches of fenestration (Figure 2C, 2D and 2E).

In summary, we report a very rare case of two aneurysms originating at distal BA fenestration. Patient has given her consent for publication of this report.

### Disclosure

The authors report no conflicts of interest.

### Funding Information

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