Giant Vertebral Artery Aneurysm Treated by Proximal Ligation: Case Illustration

Proksimal Bağlama ile Tedavi Edilen Dev Vertebral Arter Anevrizması Kısa Olgu Sunumu

DENİZ BELEN, H. ZAFER KARS

SSK Ankara Eğitim Hastanesi II. Nöroşirürji Kliniği

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CASE ILLUSTRATION

An 8-year-old boy presented with the complaints of right arm clumsiness and severe headache. Both problems had started 2 weeks earlier, and had progressed during this period. Cranial magnetic resonance imaging (MRI) showed a giant aneurysm of the left vertebral artery (VA) that was causing marked brainstem compression but showed no evidence of hemorrhage (Figure 1, left). Cerebral angiography confirmed that the lesion involved the entire intracranial portion of the left VA (Figure 1, right). A left suboccipital craniotomy was performed. This exposed the fusiform aneurysm, but it was not possible to approach the distal portion of the due to the aneurysm mass effect the lesion was causing. A McFadden clip was applied to the left VA at the point where it entered the subarachnoid space, and this collapsed the distal portion of the vessel. The patient's right arm was completely paralyzed in the early postoperative period, but this improved within 6 months. An angiography obtained 6 months later after the surgery revealed no filling of the aneurysm (Figure 2, left) and follow-up MRI at second year showed no residual aneurysm (Figure 2, right).

The goal in treating intracranial aneurysms is to obliterate the lesion while preserving the parent vessel. Giant aneurysms of the vertebrobasilar system continue to pose difficult therapeutic challenges. Some of these aneurysms cannot be successfully clipped, coiled or trapped, and proximal arterial ligation remains only treatment alternative for cases in which sufficient collateral circulation has developed (2, 3, 4). Thrombosis within the aneurysmal lumen often occurs immediately after ligation, presumably due to cessation of transmitted arterial pulsation (1). The marked reduction in aneurysm size that we observed in our case suggests that this is what occurred in our patient. In most cases, complete thrombosis occurs within 1 month post-ligation (1). It is rare to see recanalization or rupture of a giant aneurysm after proximal ligation, but close follow-up of these patients is recommended.

Figure 1 Left: An axial T1-weighted image shows a giant, partially thrombosed aneurysm of the left vertebral artery compressing the brainstem. Right: A selective angiogram of the left vertebral artery reveals a giant fusiform aneurysm.

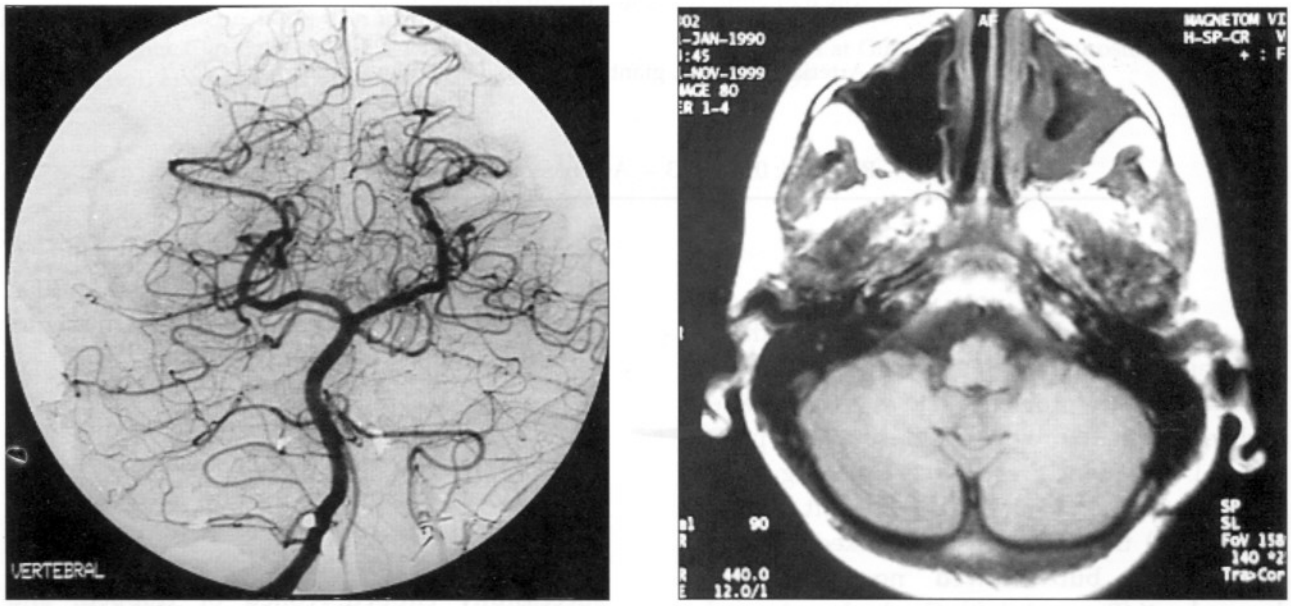

Figure 2 Left: An angiogram obtained 6 months after proximal ligation demonstrates no flow into the left vertebral artery. Right: A T1-weighted MRI image obtained 2 years after surgery shows normal posterior fossa anatomy.

Correspondence: Deniz Belen, M.D.
60. Sokak 16/2 Emek, 06510
Ankara-Turkey
Fax : 90-312-215 9178
E-mail: denizbelen@hotmail.com

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