Microsurgical resection of an enlarging lateral pontomedullary cavernous malformation

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The extended retrosigmoid approach provides an excellent corridor to the lateral aspect of the pontomedullary junction (PMJ). This video demonstrates a microsurgical resection of a progressive enlarging cavernous malformation (CM) of the PMJ. The patient is a 33-year-old woman with progressive symptoms, including right facial droop, left hemianesthesia, diplopia, and nystagmus. The patient underwent a right extended retrosigmoid approach with intraoperative neuronavigation and neuromonitoring. Lower cranial nerve dissection allowed access to the lateral PMJ. A longitudinal corticotomy was performed above the glossopharyngeal. The CM was removed in a piecemeal fashion. Postoperative MRI confirmed gross-total resection and the patient remained neurologically stable.

The video can be found here: https://youtu.be/K_TiTo1RsQ.

KEYWORDS extended retrosigmoid; cavernous malformation; pontomedullary junction; video
lightened suction cannula on my left hand. By gently retractor the opening on the brainstem I start removing the cavernous malformation in a piecemeal fashion. Different from supratentorial cavernous malformation, malformations in the brainstem, there is minimal room for manipulation and it is very difficult to remove it circumferentially without injuring the brainstem. We continue the resection of the malformation with gentle traction of the brainstem. We can finally get to the posterior portion, which is always the most critical part, as we can leave some malformation behind. We inspect the cavity for any residual. As you can observe, the lighting suction is extremely useful to see the cavity. At this point, it is extremely difficult to inspect the cavity only with the microscope light. We can see that we are still leaving some malformation behind, and again doing a good inspection of the cavity we make sure we don’t leave any residual behind. As you can observe, I have a mouthpiece on the microscope and that allows me to always maintain an adequate focus while my two hands are helping to remove the malformation. This is the last portion of the cavernoma and I remove it with gentle traction and contraction. I finally inspect the cavity seeing normal brainstem parenchyma. We do not remove the hemosiderin stain. Copious irrigation and the case is finish. Postoperative MRI demonstrates gross-total resection of the malformation. The patient remained neurologically as baseline and was discharged home 3 days after.

**Time points**

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<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>2:25</td>
<td>Positioning</td>
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<tr>
<td>2:41</td>
<td>Dura opening</td>
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<td>3:52</td>
<td>Corticotomy</td>
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<td>Resection</td>
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**References**


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**Disclosures**

The authors report no conflict of interest concerning the materials or methods used in this study or the findings specified in this article.