Teaching Neuroimage: Reinhold's Hemimedullary Syndrome

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A 32-year-old male without vascular risk factors presented with acute onset vertigo, swallowing dysfunction and right sided weakness. Physical examination revealed following signs on the left side: Horner’s syndrome, lower motor neuron 9th, 10th, 12th cranial nerve palsies, cerebellar limb ataxia, loss of pain and temperature of face, fine touch and proprioception of face, trunk and limbs. On the right side he had hemiplegia with loss of pain, temperature on the trunk and limbs. MRI Brain revealed acute infarct involving left half of medulla (Figure, A and B). CT Angiogram of head and neck vessels showed occlusion of left vertebral artery V4 segment (Figure, C, D, and E). A diagnosis of Reinhold’s complete hemimedullary syndrome was made (Table). The almost similar incomplete hemimedullary syndrome of Babinski-Nageotte lacks ipsilateral hypoglossal nerve palsy.

Work up for stroke etiology revealed normal glycosylated haemoglobin, lipid profile, negative hypercoagulable, autoimmune and vasculitis panel. Echocardiogram was normal with prolonged cardiac telemetry revealing no cardiac arrhythmias. He was maintained on Acetylsalicylic acid 100 mg once daily and Atorvastatin 40 mg at night time for secondary stroke prophylaxis.

http://links.lww.com/WNL/C515
REFERENCES:


FIGURE:

Classical hemimedullary syndrome of Reinhold: Non-contrast MRI Brain showing hyperintense signal involving the left hemimedulla on diffusion weighted imaging (A; black arrow) with corresponding hypointensity on apparent diffusion coefficient sequences (B; black arrow), suggestive of acute infarct. Coronal section of CT cerebral angiogram demonstrating non-visualization of left vertebral artery V4 segment (C; white arrow) and intact basilar artery flow distally (E; white arrow). Abrupt occlusion of left vertebral artery V4 segment shown on the three-dimensional shaded surface display volume rendering (SS-VRT) reconstructed images (D; white arrow).
<table>
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<th>Stroke Syndrome</th>
<th>Location in medulla</th>
<th>Structures affected</th>
<th>Clinical Features</th>
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<tr>
<td>Dejerine’s Syndrome</td>
<td>Medial Medulla</td>
<td>Hypoglossal nerve nucleus&lt;br&gt;Medial Lemniscus&lt;br&gt;Pyramidal tract</td>
<td><strong>Ipsilateral</strong>&lt;br&gt;Tongue paralysis&lt;br&gt;<strong>Contralateral</strong>&lt;br&gt;Loss in trunk/limbs of fine touch, proprioception; hemiplegia</td>
</tr>
<tr>
<td>Wallenberg’s Syndrome</td>
<td>Lateral Medulla</td>
<td>Descending tract or nucleus of V nerve&lt;br&gt;Descending sympathetic fibres&lt;br&gt;Spinocerebellar fibres/restiform body&lt;br&gt;Nucleus Ambiguus&lt;br&gt;Vestibular nucleus&lt;br&gt;Lateral Spinothalamic tract</td>
<td><strong>Ipsilateral</strong>&lt;br&gt;Loss of pain, temperature – face&lt;br&gt;HORNER’S SYNDROME&lt;br&gt;Ataxia/Dysmetria&lt;br&gt;9th, 10th cranial nerve palsies&lt;br&gt;<strong>Contralateral</strong>&lt;br&gt;Loss of pain, temperature (trunk/limbs)&lt;br&gt;Nystagmus</td>
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<td>Babinski-Nageotte’s Syndrome</td>
<td>Lateral Medulla with ventral extension</td>
<td>All components of Wallenberg’s syndrome with involvement of pyramidal tract</td>
<td>All components of Wallenberg’s syndrome with contralateral hemiplegia</td>
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<tr>
<td>Cestan-Chenais’s Syndrome</td>
<td>Lateral Medulla with ventral extension</td>
<td>All components of Wallenberg’s syndrome except spinocerebellar fibres/restiform body, but with involvement of pyramidal tract</td>
<td>All components of Wallenberg’s syndrome except ipsilateral cerebellar ataxia but with contralateral hemiplegia</td>
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<td>Reinhold’s Syndrome</td>
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<td>All components of Dejerine’s and Wallenberg’s syndrome</td>
<td>All components of Dejerine’s and Wallenberg’s syndrome</td>
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**TABLE – Description of the Medullary Vascular Syndromes**
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