Neurodevelopmental outcomes of infants with Vein of Galen aneurismatic malformation

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Objective. Vein of Galen aneurismatic malformation (VGAM) is a rare congenital anomaly characterized by an arteriovenous shunting of the choroidal system draining into the vein of Galen forerunner. Reliable long-term data on neurodevelopmental outcome are still lacking. Our objective is to report developmental functioning assessed through The Bayley Scales of Infant and Toddler Development-Third Edition (Bayley-III) in patients with VGAM.

Materials and Methods. We conducted an observational retrospective study collecting medical data from the electronic medical records during the study period April 2020-April 2022. Developmental outcome was assessed using three domains (cognitive, language, motor) of Bayley-III Scales at 6 months of age.

Results. A total of 3 infants with VGAM (100% male, 0% female) were included in the study. Bayley-III Scales were performed at a mean age of 6.6 months (Table 1).

No decrease in cognition (Mean Mental Developmental Index: 100) and language domains (Mean Language Score: 105) was detected in our cohort. We were able to detect a decrease in motor skills in 1 patient (33.3%) showing a motor Development Index of 73 at 6.6 months of age.

Conclusions. Infants with VGAM may display poorer motor development at 6 months. Our study emphasizes the relative importance of Bayley-III Scores to be routinely used in a clinical setting to assess the development of children with VGAM. Early identification of delay is critical to improve early intervention in order to minimize impairment.

Table 1.

<table>
<thead>
<tr>
<th>Case 1</th>
<th>Age(days) at first embolization</th>
<th>Age(days) at second embolization</th>
<th>Age(months) at Bayley-III evaluation</th>
<th>Bayley-III Cognitive Score</th>
<th>Bayley-III Motor Score</th>
<th>Bayley-III Language Score</th>
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<tr>
<td>10</td>
<td>17</td>
<td>6.6</td>
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