BÖLÜM 25

HİDROSEFALİ VE ARAKNOİD KİST

Olcay GÜNGÖR [1]
Beste KİPCAK YÜZBAŞI [2]

HİDROSEFALİ

Tanımı

Hidrosefali, beyin omurilik sıvısı (BOS) üretimi ile absorpsiyon veya akışı arasındaki dengesizlikten kaynaklanan, artan basınca bağlı beynin sıvı içeren boşlukların artmasıdır.[1,2]

Sınıflama

Hidrosefali için bir dizi sınıflandırma sistemi önerilmiştir.[1,3,4]

- Komminikan ve Non Komminikan (Patofizyoloji)
- Obstrüktife – absorbtif (Patofizyoloji)
- Edinilmiş ve Konjenital (Prenatal-postnatal)
- Genetik veya santral sinir sistemi (SSS) malformasyonu ile ilişkili ve izole edilmiş (Genetik)
- İntraventriküler obstrüktife ve ekstraventriküler obstruktif (BOS dolaşımı)
- Basit ve komplike (İzole)

Kompanse ve kompanse olmayan hidrosefali terimleri genellikle kafa içi basınç artışının kanıtı ile ilişkili olan ventriküler boyut artışının olup olmadığına göre sınıflandırılır. Bazı durumlarda, ventriküler boyutta kademeli bir artış yeni bir dengeye ulaşarak stabil hale gelir ve hastada kafa içi basınç artışına ilişkin herhangi bir semptom veya bulgu görülmez. Bununla birlikte, hidrosefalisi olan hastalar, daha sonraki zamanlarda semptom ve bulgu geliştirebilir ve bu nedenle süreç tamamen stabil değildir. Obstruktif olmayan hidrosefalide akış engellenmez, ancak BOS subaraknoid boşlukta yetersiz şekilde geri emilirken, obstrüktif hidrosefalide ventriküllerden subaraknoid boşluğa BOS akışı engellenir [1]. Konjenital hidrosefali doğumda mevcuttur ve sıklıkla gelişimsel kusurlarla ilişkilidir, oysa edinilmiş hidrosefali beyin ve ventriküllerin gelişmesinden sonra ortaya çıkar.[5] (Resim 1)

Fetal hidrosefalinin alt tipleri, BOS akışının tıkanma mekanizmasına göre sınıflandırılır ve aşağıdakileri içerir:

1. Tek noktadan akışa engel olan primer veya basit hidrosefali
2. Arnold-Chiari malformasyonu gibi CNS'nin karmaşık anormalliklerini içeren disgenetik hidrosefali
3. Tümör veya kanamadan kaynaklanan ikincil hidrosefali.

[1] Doç. Dr., Pamukkale Üniversitesi Tıp Fakültesi Çocuk Nörolojisi BD., drolcaygungor@gmail.com
[2] Dr. Öğr. Üyesi, Pamukkale Üniversitesi Tıp Fakültesi Çocuk Nörolojisi BD., byuzbasi@pau.edu.tr

KAYNAKLAR

1. Amal Abou-Hamden and James M. Drake. Hydrocephalus and Arachnoid Cysts. ın:Swaiman KF, Ashwal S, Ferriero DM, Schor NF, eds. Swaiman's Pediatric Neurology. 6th ed. Elsevier Saunders; 2018.p.561-76.
2. Rekate HL. A contemporary definition and classification of hydrocephalus. Semin Pediatr Neurol 2009;16:9–15.
3. Boaz JC, Edwards-Brown MK. Hydrocephalus in children: neurosurgical and neuroimaging concerns. Neuroimaging Clin N Am 1999;9:73–91.
4. Beni-Adani L, Biani N, Ben-Sirah L, Constantini S. The occurrence of obstructive vs absorptive hydrocephalus in newborns and infants: relevance to treatment choices. Childs Nerv Syst 2006;22:1543–63.
5. Richards P. Walter dandy. In: Ashwal S, editor. The founders of child neurology. San Francisico: Norman Publishing; 1990. p. 472–7.
6. Drake JM. The surgical management of pediatric hydrocephalus. Neurosurgery 2008;62:633–40, discussion 640–42
7. Paciorkowski AR, Greenstein RM. When is enlargement of the subarachnoid spaces not benign? A genetic perspective. Pediatr Neurol 2007;37:1–7.
8. Fernell E, Hagberg G. Infantile hydrocephalus: declining prevalence in preterm infants. Acta Paediatr 1998;87:392–6.
9. Blackburn B, Fineman R. Epidemiology of congenital hydrocephalus in Utah, 1940–1979: report of an iatrogenically related "epidemic". Am J Med Genet 1994;52:123–9.
10. Chakraborty A, Crimmins D, Hayward R, Thompson D. Toward reducing shunt placement rates in patients with myelomeningocele. J Neurosurg Pediatr 2008;1:361–5.
11. Zacharia A, Zimine S, Lovblad KO, et al. Early assessment of brain maturation by MR imaging segmentation in neonates and premature infants. AJNR Am J Neuroradiol 2006;27:972–7.
12. Silverberg GD, Huhn S, Jaffe RA, et al. Downregulation of cerebrospinal fluid production in patients with chronic hydrocephalus. J Neurosurg 2002;97:1271–5.
13. Greitz D. Radiological assessment of hydrocephalus: new theories and implications for therapy. Neurosurg Rev 2004;27:145– 65, discussion 166–7.
14. Renier D, Sainte-Rose C, Pierre-Kahn A, Hirsch JF. Prenatal hydrocephalus: outcome and prognosis. Childs Nerv Syst 1988;4:213–22.
15. Chi JH, Fullerton HJ, Gupta N. Time trends and demographics of deaths from congenital hydrocephalus in children in the United States: National Center for Health Statistics data, 1979 to 1998. J Neurosurg 2005;103:113–18
16. Tulipan N, Sutton LN, Bruner JP, Cohen BM, Johnson M, Adzick NS. The effect of intrauterine myelomeningocele repair on the incidence of shunt-dependent hydrocephalus. Pediatr Neurosurg 2003;38:27–33.
17. Tuli S, Drake J, Lamberti-Pasculli M. Long-term outcome of hydrocephalus management in myelomeningoceles. Childs Nerv Syst 2003;19: 286–91.
18. Lemons JA, Bauer CR, Oh W, et al. Very-low-birth-weight outcomes of the NICHD Neonatal Research Network, January 1995 through December 1996. Pediatrics 2001;107.
19. Ment LR, Allan WC, Makuch RW, Vohr B. Grade 3 to 4 intraventricular hemorrhage and Bayley scores predict outcome. Pediatrics 2005;116: 1597–8.
20. Wilson-Costello D, Friedman H, et al. Improved survival rates with increased neurodevelopmental disability for extremely low birth weight infants in the 1990s. Pediatrics 2005;115: 997–1003.
21. Castro-Gago M, Alonso A, Eirís-Puñal J. Autosomal recessive hydrocephalus with aqueductal stenosis. Childs Nerv Syst 1996;12:188.
22. Ferlini A, Ragno M, Gobbi P et al. Hydrocephalus, skeletal anomalies, and mental disturbances in a mother and three daughters: a new syndrome. Am J Med Genet 1995;59:506.
23. Benacerraf B, Birnholz J. The diagnosis of fetal hydrocephalus prior to 22 weeks. J Clin Ultrasound 1987;15:531–6.
24. Oi S, Honda Y, Hidaka M, Sato O, Matsumoto S. Intrauterine high resolution magnetic resonance imaging in fetal hydrocephalus and prenatal estimation of postnatal outcomes with "perspective classification. J Neurosurg 1998;88:685–94.
25. Ment LR, Duncan CC, Geehr R. Benign enlargement of the subarachnoid spaces in the infant. J Neurosurg 1981;54:504–8.
26. Barlow C. CSF dynamics in hydrocephalus. Brain Dev 1984;6:119–27.
27. Alvarez LA, Maytal J, Shinnar S. Idiopathic external hydrocephalus: natural history and relationship to benign familial macrocephaly. Pediatrics 1986;77:901.
28. Weller S, Shulman K. Infantile hydrocephalus: clinical, histological and ultrastructural study of brain damage. Arch Dis Child 1972;70:129–36.
29. Del Bigio MR. Cellular damage and prevention in childhood hydrocephalus. Brain Pathol 2004;14:317.
30. Sävman K, Blennow M, Hagberg H, Tarkowski E, Thoresen M, Whitelaw A. Cytolike response in cerebrospinal fluid from preterm infants with post-haemorrhagic ventricular dilatation. Acta Paediatr 2002;91:1357–63.
31. Lumenta CB, Skotarczak U. Long-term follow-up in 233 patients with congenital hydrocephalus. Childs Nerv Syst 1995;11:173.
32. Drake JM, Kestle JR, Milner R et al. Randomized trial of cerebrospinal fluid shunt valve design in pediatric hydrocephalus. Neurosurgery 1998;43:294–303, discussion 303–295.
33. Gosalakkal JA. Intracranial arachnoid cysts in children: a review of pathogenesis, clinical features, and management. Pediatr Neurol 2002;26:93.
34. Domingo Z, Peter J. Midline developmental abnormalities of the posterior fossa: correlation of classification with outcome. Pediatr Neurosurg 1996;24:111.
35. Pascual-Castroviejo I, Roche MC, Martinez Bermejo A, et al. Primary intracranial arachnoidal cysts. A study of 67 childhood cases. Childs Nerv Syst 1991;7:257.

36. Martinez-Lage JF, Garcia Santos JM, Poza M, et al. Bilateral temporal arachnoid cysts in neurofibromatosis. J Child Neurol 1993;8:383.
37. Gosalakkal JA. Intracranial arachnoid cysts in children: a review of pathogenesis, clinical features, and management. Pediatr Neurol 2002;26:93.
38. Mohn A, Schoof E, Fahlbusch R, Wenzel D, Dörr HG. The endocrine spectrum of arachnoid cysts in childhood. Pediatr Neurosurg 1999;3:316
39. Lancon JA, Ellis AL. Giant posterior fossa arachnoid cyst. Pediatr Neurosurg 2004;40:151
40. D'Angelo V, Gorgoglione L, Catapano G. Treatment of symptomatic intracranial arachnoid cysts by stereotactic cyst-ventricular shunting. Stereotact Funct Neurosurg 1999;72:62.
41. Koch CA, Voth D, Kraemer G, et al. Arachnoid cysts: does surgery improve epileptic seizures and headaches? Neurosurg Rev 1995;18:173.
42. Millichap JG. Temporal lobe arachnoid cyst-attention disorder syndrome: role of the electroencephalogram in diagnosis. Neurology 1997;48:1435.
43. De Volder AG, Michel C, Thauvoy C, et al. Brain glucose utilisation in acquired childhood aphasia associated with a sylvian arachnoid cyst: recovery after shunting as demonstrated by PET. J Neurol Neurosurg Psychiatry 1994;57:296.
44. Chang IC. Surgical experience in symptomatic congenital intraspinal cysts. Pediatr Neurosurg 2004;40:165.