Case Report

AVID triad: a case report

Manoj M. C., Lokesh Kumar T.*

Department of Radio Diagnosis, Mahatma Gandhi Medical College and Research Institute, Pondicherry, India

Received: 12 March 2020
Accepted: 02 April 2020

*Correspondence:
Dr. Lokesh Kumar T.,
E-mail: lokikumart@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Asymmetric ventriculomegaly, interhemispheric cyst and dysgenesis of the corpus callosum (AVID) constitutes a rare imaging triad. Additional findings include subcortical and subependymal heterotopia, polymicrogyria, fused thalami, deficient falx, and hydrocephalus. The knowledge of this triad helps us to diagnose prenatally by sonography and fetal MRI. In this case report authors present MRI Imaging findings in a case of AVID syndrome in a 6-year old male child presenting with history of seizures and delayed milestones.

Keywords: Asymmetric ventriculomegaly, Agenesis, AVID, Corpus callosal dysgenensis, Interhemispheric cyst

INTRODUCTION

The imaging triad of ventriculomegaly, interhemispheric cyst, and callosal malformation has been reported in the literature. However, many cases have been reported postnatally in children and adults. The knowledge of this triad helps us to diagnose prenatally by sonography and fetal MRI.

CASE REPORT

A 6-year old male child presented with H/o episodes of seizures since birth, H/o delayed mile stones and poor school performance. MRI Brain with contrast was done for further evaluation. MRI Brain with contrast shows partial agenesis of corpus callosum with complete absence of the splenium, thinning of the body with normally appearing Genu and Rostum (Figure 1). Asymmetric dilation of the supratentorial ventricle are seen (Figure 2). Two large interhemispheric cystic lesions (in left parafalcine location) in the cerebral hemispheres (along medial left fronto-parietal lobe). One of the cystic lesion shows mild T1 iso intensity and T2 hyperintensity contents and shows mild peripheral enhancement on post contrast study. The other cystic lesion follow CSF intensity (Figure 3).

Figure 1: Sagittal T1 weighted image showing thinning of the body of corpuscallosum (arrow).
Figure 2: Axial weighted T1W image showing asymmetrical dilatation of supratentorial ventricles(*)

Figure 3: (a) T1W sagittal, (b) T1W, (c) T2W and (d) T1 post contrast axial image show two large interhemispheric cystic lesions (in left parafalcine location) in the cerebral hemispheres (along medial left frontoparietal lobe).

No obvious communication of the cystic lesions with the ventricular system - Type 2 cyst in Barkovich et al, classification. Retrocerebellar cystic lesion with thin membrane - possibility of arachnoid cyst (Figure 4).

Deformed brain parenchyma in the right parafalcine lobe (medial to the right lateral ventricle) which shows heterogenous enhancement on post contrast study - Gliosis enhancement - sequelae of previous parenchymal insult (Figure 5).

Small nodular heterotropia (measuring ~ 4mm) in the occipital horn of right lateral ventricle (Figure 6).

Multiple intracranial cysts associated with partial agenesis of the corpus callosum and asymmetrical
Developmental hydrocephalus locules may hyperintense CSF With complete nodular abnormalities Due to advancements of fetal ultrasonography and MRI, these abnormalities are frequently identified in utero. CT cannot fully characterize the associated abnormalities like nodular heterotopias. MRI is the preferred modality for complete characterization of the congenital anomalies.

Since advancements in MRI, Type 1 cysts typically appear isointense to CSF on all pulse sequences, while Type 2 cysts are often hyperintense to CSF on both T1 and T2WI. Type 2 cysts may also be multiloculated, and communication between locules and ventricles may be difficult to visualize. The imaging triad AVID (Asymmetric Ventriculomegaly, Interhemispheric cyst, and Dysgenesis of the corpus callosum) has been proposed to distinction from aqueductal stenosis and porencephaly. Associated subependymal and subcortical heterotopias, polymicrogyria, deficient falx, fused thalami and hydrocephalus may also be associated. 

Developmental delay and focal neurologic deficits are now shown to vary significantly in both type 1 and 2 cysts, ranging from severe delay and medically refractive seizures to average aptitude, normal social interactions and no clinical findings. This patient was seen for seizures since birth and exhibited mild developmental delay and poor performance in school. Overall, seizures are seen in about half of patients, and lifelong epilepsy is common.

Management includes cyst fenestration or shunting which may result in significant clinical improvement in appropriately selected individuals.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES
