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CASE STUDY

CORPUS CALLOSAL AGENESIS WITH CENTRAL PONTINE MYELINOLYSIS: A RARE CASE

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ABSTRACT

A case of corpus callosum agenesis associated with a central pontine myelinolysis is described. It is the foremost white matter structure in the brain and the chief commissural pathway linking the hemispheres of the human brain. The corpus callosum, or a definite part of it, can be pretentious selectively. Corpus callosum agenesis is a congenital disorder which includes whole or fractional absence of the corpus callosum. Callosal disorders are characterized by vision impairments, poor motor coordination, hypotonia, delays in sitting and walking, delayed toilet training and chewing, swallowing difficulties and low perception of pain,. It can also be associated with spasticity, seizures, early feeding difficulties and/or gastric reflux, hearing impairments, abnormal head and facial features, and a mental handicap.

INTRODUCTION

It is the foremost white matter structure in the brain and the chief commissural pathway linking the hemispheres of the human brain. The corpus callosum, or a definite part of it, can be pretentious selectively. [1] Corpus callosum agenesis is a congenital disorder which includes whole or fractional absence of the corpus callosum. Callosal disorders are characterized by vision impairments, poor motor coordination, hypotonia, delays in sitting and walking, delayed toilet training and chewing, swallowing difficulties and low perception of pain,. [2] It can also be associated with spasticity, seizures, early feeding difficulties and/or gastric reflux, hearing impairments, abnormal head and facial features, and a mental handicap. [3]A case of corpus callosum agenesis associated with a central pontine myelinolysis is described.

CASE REPORT

An 11 month old male baby resident of pamidi of consanguineous marriage presented with complains of inability of head holding and delayed speech and no other positive complains. Crying during micturition. The patient had full term cesarean delivery. Immunization history was unremarkable. Her other motor and sensory milestones were unremarkable. The patient's general and systemic examination as unremarkable. Following this he was subjected for a routine non-contrast MRI to rule out any findings.

Imaging findings showed

- Parallel non-converging extensively divided lateral ventricles (axial sections)
- Occipital horn dilated (Colpocephaly).
- Trident shaped frontal horns (coronal sections).
- Non visualization of normal stripe of CC (mid sagittal section), gyri and sulci directly radiating from roof of third ventricle.
- Missing cingulate gyrus (sagittal section) which is typically seen alike and cranial to CC.
- Vertically originated hippocampi have key whole manifestation of temporal horns (coronal sections).

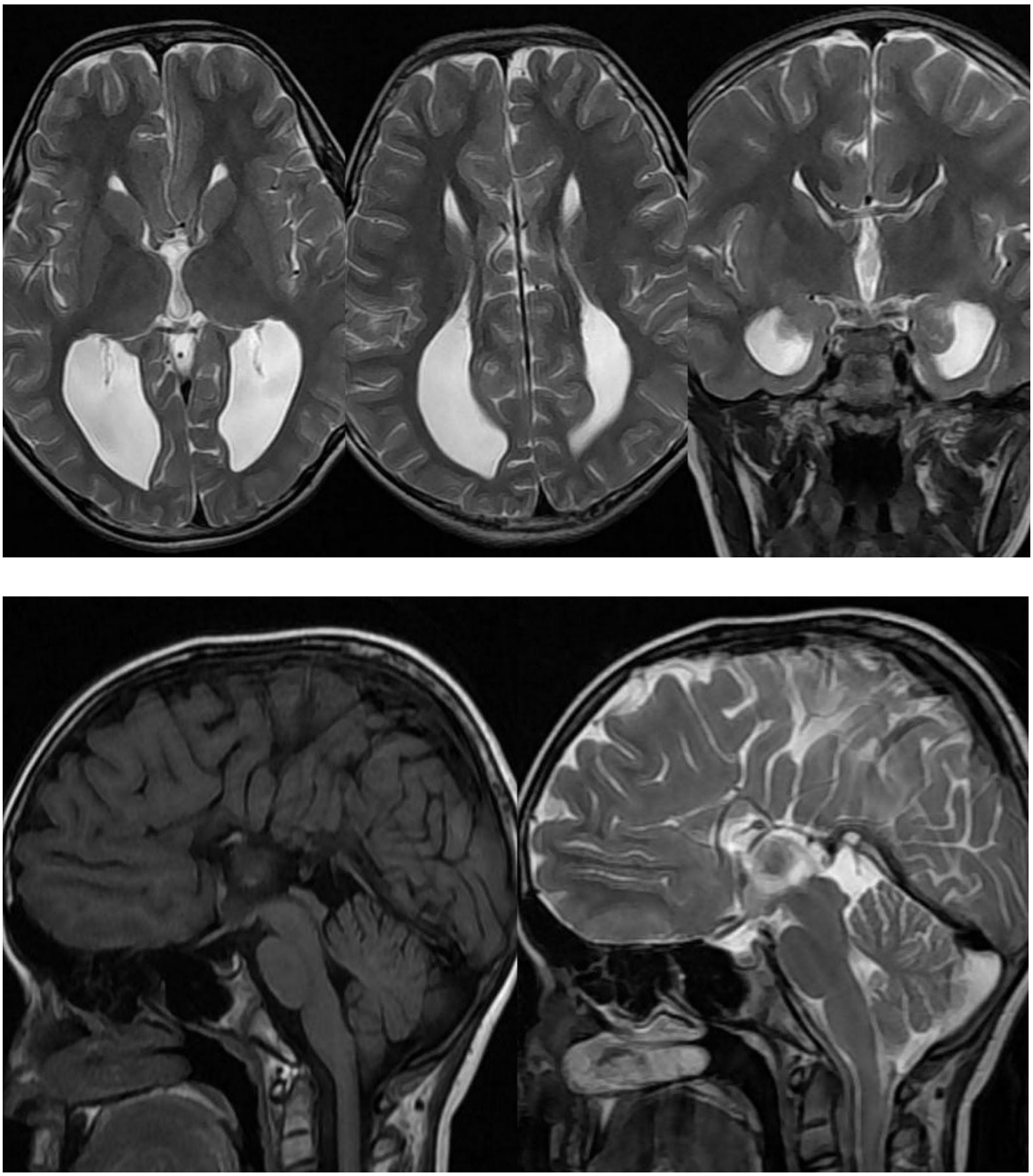

Figure-1: Agenesis of corpus callosum

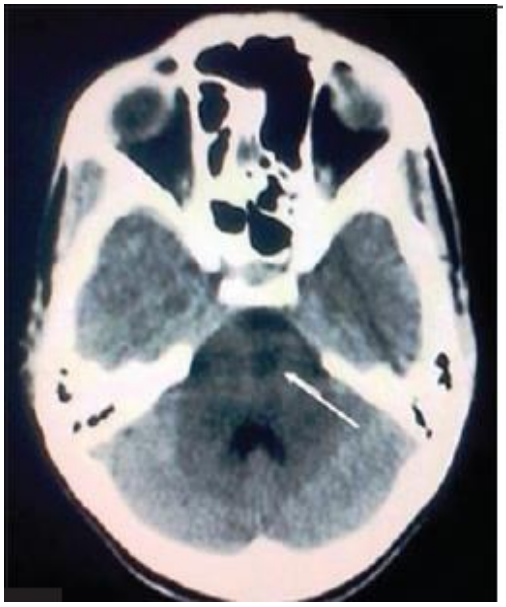

Figure-2: Central pontine myelinolysis

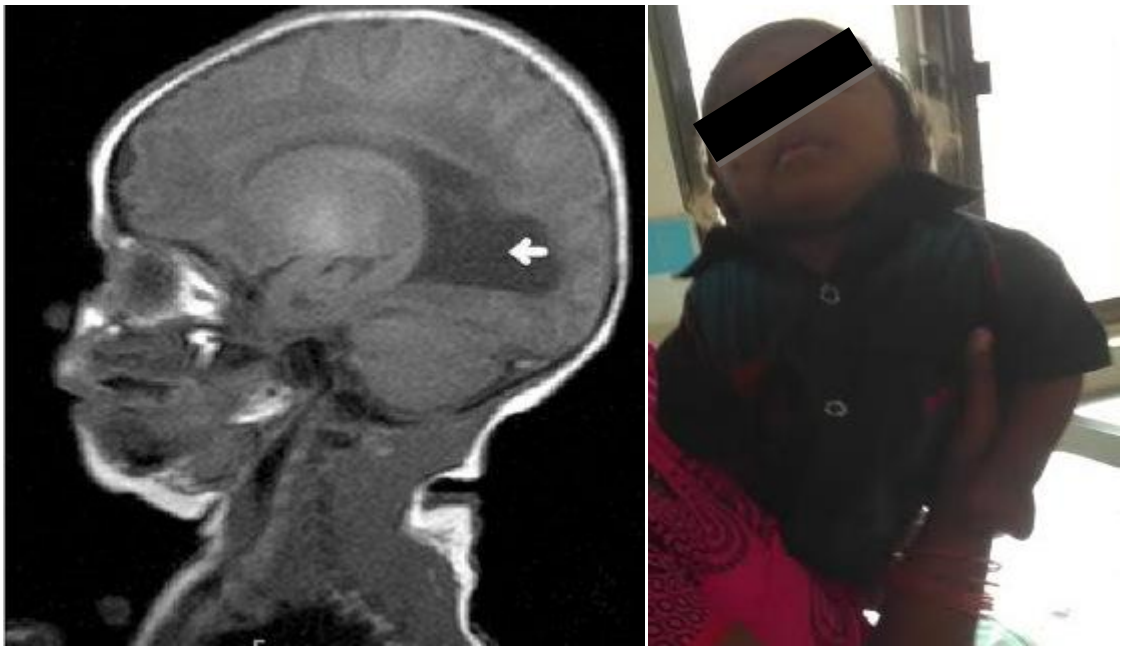

Figure-3: Colpocephaly

DISCUSSION

Corpus callosum agenesis is a rare condition which generally presents with clinical features such as feeding problems, seizures, developmental delay, impaired visual and auditory memory, impaired hand-eye coordination and hydrocephalus. [4]In CC agenesis, commissural fibers do not cross the midline in its place (Probst bundles) which lies along the super medial aspect of the lateral ventricles and the third ventricle. Whole agenesis of corpus callosum can result from vascular, infectious, genetic or toxic causes. [5]

Recent facts suggest that a blend of genetic mechanisms and intricate genetics may be concerned in the etiology of agenesis of corpus callosum. Roughly 35% of individuals with CC agenesis, the reason are 10% have chromosomal anomalies and the remaining 35% have familiar genetic syndromes. [6]

Children with callosal conditions experience spasticity, hypotonia, poor motor coordination and cerebral palsy. [7] Epilepsy and seizures are more familiar in these children and adolescents, with the reported prevalence unreliable from 27 to 86% depending on the population studied. Besides, developmental delays are relatively common among children with CC agenesis, with the proposed prevalence of 70 % of those premeditated. Some children may show delays in achieving language, motor and cognitive milestones. [8,9] In our case, the patient having only delay in head holding, further developmental delays may be recognized shortly as time proceeds.

Another perceptible feature is the reduced comprehension of humor and also the impairment in the verbal expression of their emotional experience. [10, 11] Corpus callosum is the major lane for coordinating syntactic and prosodic information in order to fabricate precise verbal descriptions about stimuli that engage negative emotions. It is clear that callosal disorders significantly diminish ability for transferring this composite information between the hemispheres. [12]

In general, clinical presentation in corpus callosum disorders differ extensively and their severity depends strongly on the presence of other malformations of CNS. Children's with isolated corpus callosum disorders can show any of the clinical features described above, but their global functioning and prospect prognosis are much better. [13]

CONCLUSION

Agenesis of the corpus callosum is a congenital disorder in which there is a whole or fractional absence of the corpus callosum. Some characteristics with callosal disorders include vision impairments, poor motor coordination, hypotonia, delays in motor milestones such as sitting and walking, delayed toilet training, low perception of pain, and chewing and swallowing difficulties. Sometimes associated with callosal disorders include spasticity, seizures, early feeding difficulties and/or gastric reflux, hearing impairments, abnormal head and facial features, and a mental handicap.

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