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Case Report

Childhood-acquired aphasia: A case report

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Abstract

Childhood-acquired aphasia or Childhood-acquired language disorder is a neurological disorder caused by damage of the brain areas related to some aspects of language production and language processing. As a result, there are problems in understanding the speech, which interferes with what the speaker intends to communicate. There are also impaired speaking and writing skills. When language processing area is impaired then communication is significantly affected and behavioral problems arise reflecting on inadequate language performance, below that could be expected based on children's age level. The aim of this paper is to report a case of Childhood-acquired aphasia or Childhood-acquired language disorder in a four-year-old boy. 4-year-old male Muslim child from an urban environment with lower economic education. Referred by a child neurologist with complaints of being easily irritated, expressed, especially with his mother's movement, irritability, episodic tantrums and fights with siblings. Speaks less than in periods prior to the onset of symptoms. He produces meaningless speech; he is unable to understand all speech during communication, which has been happening for a period of 30 days. Also has a history of seizure for 1 month. The child was born by normal vaginal delivery without any complications during antenatal, natal and post-natal period. His milestones of development in all domains were age appropriate and he had no history of mental illness in the family. His socialization as well as the relationship with friends was good before the seizure occurrence. The linguistic assessment revealed that the child cannot understand the speaker's simple and complex sentences, as well as the pragmatic linguistic representations necessary for successful functional communication in various social contexts. These facts reveal that there is difficulty in the development of receptive language. There were abnormalities in his EEG report. Childhood-acquired language disorder or Childhood-Expressive language assessment revealed a-grammatical speech with a breakdown of sentence structure and with the omission or misuse of grammatical morphemes. There is spelling error in alphabet\letter and, also in words that meant disorder in the written expression. Acquired aphasia was assigned to the boy managed with bio psychosocial approach. Follow up after 3 months revealed gradual decrease of behavioural problems with significant improvement in language development. This case revealed that Childhood-acquired aphasia or Childhood-acquired language disorder sometimes present with seizure disorder and behaviour disturbances of children. Meticulous history and index of suspicion are able to provide evaluation of child with linguistic disorders.

Keywords: Childhood-acquired aphasia or Childhood-acquired language disorder, Bangladesh, Case Report

Introduction

Childhood-acquired aphasia or Childhood-acquired language disorder is a neurological disorder caused by damage of the brain areas that are responsible for language production and language processing. It may occur suddenly¹ in children with precise and progressive impairment of language after having gone through a

previous period of acquisition and normal development of the communicative system.² Childhood aphasia is not a disease but a symptom of brain damage resulting in stroke, infection or inflammation of brain tissues, head injury, brain tumor, and also epilepsy that affects language associated regions of the brain. The type and severity of

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language dysfunction depends on the precise location and extent of the brain tissue damage.¹ Childhood aphasia can affect all aspects of a child's language domains such as thinking of the right word, using the correct grammar when talking, writing and, also understanding what they hear or read.³ Some authors suggest that language disorder or aphasia acquired in childhood may be a symptom of neurological disorder - such as epilepsy with paroxysmal abnormalities on the EEG -, as well as being associated with language impairment resulting from clinical crises or ictal speech automatisms with seizure disorder. The most studied convulsive disorder is Landau-Kleffner syndrome.^{4,5} In language disorder or in aphasia acquired in childhood, children showed significant impairment in the oral production of complex syntactic construction of grammatical sentences; also demonstrated difficulty in understanding words and semantic meaning in the sentences they heard during communication in social contexts.⁶ When nervous system development of language processing area is impaired than language is significantly affected and behavioral problem arise.

Many of the children may have possibilities to be undiagnosed and untreated in a country like Bangladesh where there is limited research on Childhood-acquired aphasia or Childhood-acquired language disorder. Here, we aim to report a case of Childhood-acquired aphasia or Childhood-acquired language disorder, a 4-year-old male child with behavioral problems in order to clarify some aspects of this impairment and alert neuroscientists and educators to seek solutions to overcome the difficulties experienced by these children.

Case

A 4-year-old male Muslim child from an urban environment with lower economic education. Referred by a child neurologist with complaints of being easily irritated, expressed, especially with his mother's movement, irritability, episodic tantrums and fights with siblings. Speaks less than in periods prior to the onset of symptoms. He produces meaningless speech; he is unable to understand all speech during communication, which has been happening for a period of 30 days. Also has a history of seizure for 1 month. The child was born by normal vaginal delivery without any complications during antenatal, natal and post-natal period. His milestones of development in all domains were age appropriate and he had no history of mental illness in the family. His socialization as well as the relationship with friends was good before the seizure occurrence. The linguistic assessment revealed that the child cannot understand the speaker's simple and complex sentences, as well as the pragmatic linguistic representations necessary for successful functional communication in various social contexts. These facts reveal that there is difficulty in the development of receptive language. There were abnormalities in his EEG report. As per criteria of linguistic disorder and EEG

finding was assigned to the boy. He was prescribed with Sodium Valproate two times daily with the linguistic intervention as non-pharmacological management and advised for further follow up. Follow up after 3 months revealed gradual decrease of behavioural problems with significant improvement in language development. Ethical issues were maintained accordingly and written informed consent is taken for publication of the report from the patient.

Discussion

We report this case as a Childhood-acquired aphasia or Childhood-acquired language disorder in Bangladesh. This 4-year-old boy from lower economic upbringing presented impaired nervous system development of language processing area, impaired language development, and arised behavioural problems also. Though sometimes there might have overlaps between the specific seizure disorders and behavioural disorders the current patient had Childhood-acquired aphasia or Childhood-acquired language disorder which is reflected in the domain of language, that is, presenting difficulty in linguistic representations and their respective meanings⁷ in the words, sentences, text formations, essential for social-affective communication. The linguistic domain can be instantiated in different modalities such as auditory, visual and described at different levels of analysis, word, and sentence and text. So language disorders associated with congenital brain defects or acquired brain conditions, provoke impairment in language representation level, in functional domain level, presenting, as common results, clinical deficit,³ phonological processing deficits⁸ in the injured child brain.⁹ Impairments in word-sound planning are demonstrated by substitutions involving phonemes with dissimilar distinctive features and or omissions and disordering of phonemes (phonemic paraphasias). Brain-injured children's word-finding errors include phonemic paraphasias^{10,11,12} components of the words and sentences language production that do not follow regular word formation processes, affecting the production of inflections and derivational morphemes - called *agrammatism* or *paragrammatism*.¹³ That phenomenon results in errors of speech sound production and speech prosody,¹⁴ which is an inability to interpret syntactic processes, assigning aspects of sentence meaning in sentences that are logically, semantically and pragmatically¹⁵ correct. Pragmatics is concerned with how speakers use language according to standard models of speech production which is related with meaning¹⁶ also for successful functional social communication. So pragmatic linguistic representations are activated, typically in various social contexts, to serve intentional purposes to give instructions, for social communicate thought, and to make affective judgments to praise, blame, criticize, or empathize, pragmatic comprehension¹⁷ depending on how speech production word sound computes meaning by hearing from

something that requires distinguishing sentence meaning correctly with its semantic properties that the speaker intended to communicate.¹⁸ The adoption of evaluation aspects suggested in this paper - which take into account the social context of the child or adolescent with brain impairment - shows the importance of evaluating not only mental events, but also considering the importance of language for the definition of a subject defined as "self", someone who has a conscience that should not be ignored in scientific investigation. Language operates synchronously with the subject's signification process, interfering with the way these children perceive reality. Neuroscientists and educators are urged to seek solutions in each specific case of brain dysfunction, in order to give these children and young people conditions for a better life. When they take ownership of reality and produce awareness of themselves, they understand their place in the world and their relationships with others.¹⁹

Conclusion

Childhood-acquired aphasia or Childhood-acquired language disorders sometimes comes together with children's behavioural disturbances or seizure disorders. So meticulous history and index of suspicion assures the evaluation of children and adolescents with language disorders. This case report explains the phenomenology of Childhood-acquired aphasia or Childhood-acquired language disorder better.

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