

Speech-Language Profiling in Acquired Childhood Aphasia: Case study

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Abstract

Acquired Childhood Aphasia is condition associated with regression of Speech-Language skills. The regression of speech and language skills was secondary to Moya-Moya disease, which further was caused due to stenosis of blood vessels. The internal carotid artery was occluded in the client. Speech and language profiling was carried out and the child was 3.11-year-old at the time of reporting. Vegetative skills was affected, pre-linguistic was also affected in this case. The details of speech and language profile and the diagnosis, justification for the diagnosis is explained in this case report.

Keywords: regression; limited speech language skills; stenosis; syndrome

Introduction

Aphasia is described as a language disorder secondary to stroke, tumor and trauma to the brain. The prevalence rates in Aphasia suggest that this condition is seen in individuals above 50 years, however a recent study shows that there is an upward shift in the age of prevalence as can be seen in third or even fourth decade of life [1]. It is note-worthy that aphasia can be seen in children who are as young as 6-7 years and this condition is known as acquired childhood aphasia as the onset is seen in childhood and is sudden in nature [2].

Acquired childhood aphasia secondary to stroke is a rare condition as far as the prevalence rates are concerned. It is often associated with stroke and Moya-Moya Disease is the main cause of stroke in children [3]. Moya-Moya Disease is a condition where there is progressive narrowing of blood vessels and the clustering of the blood vessels would resemble a puff of smoke, hence the condition is termed as Moya-Moya which refers to a puff of smoke in Japanese [4]. The manifestation of Moya Moya Disease is found to occur in two peaks in other words, the manifestation can occur at two peaks: the first peak is assumed to occur between 6-15 years and the second peak is found to occur in individuals between 31-45 years. Both the genders can be affected by Moya-Moya Disease [5].

Moya-Moya Disease is often associated with stenosis or narrowing of the blood vessels, when the blood gushes through these narrow arteries, there is chances of occlusion leading to ischemic stroke. Though collateral blood supply acts as a mechanism in preserving blood supply [6], when the collateral blood supply also gets invaded by stenosis, stroke is prone to occur. The symptoms of Moya-Moya Disease may start with headache and may proceed with speechlessness. The symptoms are purely dependent on the blood arteries occluded. Acquired childhood aphasia can be seen when there

is occlusion of middle cerebral artery and posterior cerebral artery with a cluster of cognitive and language deficits in children [7].

Methods:

Demographic details of the client: The client was 7 years old at the time of reporting. She was accompanied by her parents. The parents complained that their child had regression of speech-language skills following a stroke. Hindi was the native language of the child, following this case history was taken.

Medical History: Seizures was the first symptom at the onset of problem. Following this there was paresis on the right side and involuntary movements of right limb for a duration of 3 minutes was seen. The neurologist referred the case for Digital Subtraction Angiography. This revealed that there was stenosis of Right internal carotid artery, the impression of Moya-Moya disease (Suzuki grade II) was drawn from the findings of Digital Subtraction Angiography. Following this, the opinion of neuro-surgeon was sought and the neuro-surgeon recommended revascularisation surgery. Following revascularisation surgery medical intervention was carried out, physio-therapy or speech and language therapy was not sought as the child was not stable for a period of 2 years. Later physiotherapy and speech language therapy was sought at the local place. Eventually the parents visited a premiere institute of Speech and Hearing where the documentation of speech-language deficits was carried out.

Highlights of the case history: The onset of the problem was sudden and was seen 4 years prior to the reporting of the problem. The child had history of seizures at the age of 3.11 years as a consequence of high fever, other than this there was no other symptoms before the occurrence of stroke. Motor milestones and speech-language skills were attained at the appropriate age.

Babbling was seen at the age of 6 months and the first word was acquired by the age of 1 year, which is considered to be age appropriate.

Highlights of the evaluation: Oral Peripheral mechanism evaluation revealed that the structures were normal and the functions were affected. Functions such as blowing, sucking, biting and chewing were affected. Pre-linguistic skills such as attention, concentration, was poor. Eye-hand coordination was poor the eye contact was still emerging. Probing the comprehension details revealed that the child was able to understand different shades of emotions, the child was able to comprehend lexical items, common objects and body parts. The child was able to comprehend WH questions and to stepped commands. The child had an expressive vocabulary. Receptive Language Age was 4.7-5.0 years while the expressive vocabulary was less than 1 year.

Discussion:

The onset of Moya-Moya disease is found to around 6-15 years, as the first peak of Moya-Moya disease is found to be prevalent at this age [5]. In this case, the age of prevalence was much earlier compared to the usual age of prevalence documented in literature and the studies also suggest that both the genders can be affected by Moya-Moya disease [5] against the conventional view that males are affected more than females in spoken language disorder.

The client reported following a regression. The child was hail and healthy till the age of 3.11 years and the problem manifested with seizures at this age. Following this after the occurrence of hemiparesis and involuntary movements, the case was suspected to have seizures and medical neuro-imaging revealed stenosis of Right Internal Carotid Artery and was the neurologist suspected Moya-Moya disease in the child. Following this the child developed regression in Speech and Language skills. The child reported after 3 years, with the complaint of speech and language delay. Conventionally, cases with limited speech and language skills are diagnosed to have Spoken-Language Disorder but the diagnosis is not apt in this case.

The other note-worthy finding was that the speech and language milestones were attained at appropriate age. Hence the delay in speech and language skills, a common trait seen in Spoken Language Disorder was ruled out in the client. Therefore, the client was diagnosed to have an acquired problem and the diagnosis of Acquired childhood aphasia secondary to Moya-Moya disease was made in the client.

The cause of Spoken language disorder is often obscure and unclear; however, the cause was clear in the case. Digital Subtraction Angiography revealed stenosis of the Internal Carotid Artery. The Internal carotid artery

supplies blood to the pivotal speech-language centres in the brain, due to the occlusion of this artery, the child would have manifested speech and language problems. In addition to this, the vegetative skills and cognitive skills was also affected.

Conclusions: The current case report profiles the details of a 3.11-year-old child, diagnosed to have Moya-Moya disease by neurologist. Speech language Profiling was carried out and the diagnosis of acquired childhood aphasia was made. The prevalence of diagnosis and the problems exhibited by the client is documented in detail.

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