"CEREBRAL PALSY AND LANGUAGE DISORDER"

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1. Introduction

Our knowledge of the possible methods to acquire language or causes of failure to do so is largely speculative both at a general and a particular level. It is more so in the case of non-normal (Subnormal / abnormal?) studies. Moreover, it is also not clear as to the extent to which language disorders are related to a central nervous system etiology. Hence, in this paper an attempt has been made to find out the causes of language disorder which may not be directly related to the pathological investigation of the brain and nervous system but irrevocably responsible for the poor language development of a CP child.

This paper is based on private observation of a CP child for a decade and not on any experiment or research. Hence, no scientific truth is claimed. While living with the child, it is also felt that neurolinguistic study of the language is no less different than psycholinguistic study of the child.

Finally, no attempt has been made to investigate as a result of brain damage which specific development of a non-normal child takes place and at what stage.

2. Brain and Nervous System :-

Right from the moment of our birth our body is controlled and dominated by a single but complex organ, a library, switchboard, signal-box, computer and many other things all rolled into one - the brain. It matures slowly, unlike other body organs, reaching its peak of efficiency and potential and with remorseless steadiness, it slides into decline. Its proper functioning determines the "normality" of the behavior of the individual and the part he can play in society, its efficiency determines to some extent his intelligence and his ability to compete, its storage capacity and information retrieval system, his potential to learn and remember. In addition its computing power determines his creativity and is
the primary function which distinguishes between the mature human being and the other animals on earth.

In the first place, the brain is probably composed of ten thousand million (10,000,000,000) nerve cells and perhaps four or five times these number of supporting "glial" cells. They work as communication units, receiving electrical signals from other parts of the body. On the whole, messages from the eyes tend to finish up in the back of the brain or occipital lobes; messages from the ears, nose etc. on the side or temporal lobes. In the front exist a large chunk of nervous tissues which seems to be more directly related to the personality and mood of its owner than to any of his senses. There are parts related to motor areas and there are parts principally involved in the storage of information, memory etc.

These areas are known as the cerebral cortex and they are located on the outer surface of the brain itself - i.e. right up against the inside of the skull. This is also known as 'neocortex' tucked in beneath the cerebral cortex, growing out of the spinal cord are the so-called lower centres - the old brain which deals with bodily functions such as cardiac activity, respiration, temperature etc.

Hence, we note that the brain is divided into two major functional areas in evolutionary terms - the old and the new. The former deals with the vital automatic processes and the latter with the receiving and interpreting of sensory input and the decision making processes which guide our interaction with the outside world.

But most of the functions of the brain are quite unknown and even the ones we know about are very poorly understood. It is assumed to be the organ for higher mental function, of the mind and intellect: but there is surprisingly little evidence for this, and no one has any idea what physical structures or mechanisms subservive these functions.
The brain is known to control all bodily functions by means of motor and other nerves which carry impulses from the brain outward to all parts of the body. Sometimes these are under our voluntary control, mostly they are involuntary, reflex or automatic. Reflex actions are the result of impulses passed inwards from the body towards the brain by means of sensory nerves. Clearly the brain is a very delicately organized piece of machinery and its cells are extremely specialized for their job.

The brain and the nervous system are complicated almost beyond description with much of their mechanism and rules of operation still poorly understood. It is only known that the nervous system consists of the Central Nervous System (CNS) and the Peripheral Nervous System (PNS). The brain and spinal cord make up the former and the latter consists of the nerve fibres by which the Central Nervous System is connected to all parts of the body. Human beings have a more complicated brain than any other animal species and its only is complexity which makes it different from the brains of other mammals.

3. CEREBRAL PALSY CAUSES AND CLASSIFICATION

3.1 CEREBRAL PALSY. What is it?

Cerebral palsy is a part of continuum of dysfunction which at one end merges into the field of mental subnormality and at the other end into that of 'minimum brain dysfunction'. As a result, neurological mechanisms of posture balance and movement are disorganized. The muscles which are activated for maintaining posture, balance and movement become uncoordinated or weak. Sometimes brain damage also results in sense defects of vision and hearing, abnormalities in speech and language and aberrations of perception. 'Agnosia', 'apraxias', 'hyperkinesis', distractibility may also be the result of organic brain damage. All these defects lead to various learning problems
and difficulties in communication.

It is not evident that every cerebral palsied child has all of these problems or some of these associated handicaps. But it is definite that even if the CP child is only physically handicapped, due to paucity of movement, the child cannot explore the environment fully which results in lacking everyday experiences and retards the development of language and affects the child's speech. And as his general understanding suffers, it appears that the child is mentally retarded. This can go so far that normal intelligence has been camouflaged by severe physical handicap. Furthermore, the lack of movement can affect the general behavior of the child. Thus the same abnormal behaviour may be due to lack of satisfying emotional or social experiences for which movement is necessary.

3.2 Causes of CP :-

There are many causes of brain damage including abnormal development of the brain. Anoxia, intracranial bleeding, excessive neonatal jaundice, trauma, infection, lack of oxygen in the mother's womb are some of them. Causes of CP take place in the prenatal, perinatal and postnatal periods. In all cases, it is an immature nervous system which afterwards continues to develop in the presence of the damage.

3.3 Types of CP :-

CP may be classified as quadriplegia, diplegia, paraplegia, triplegia, hemiplegia, monoplegia and so on. And they may be spastic, athetoid or ataxic. Though these types or classifications are not clear cut but for clinical reasons, these classifications are done.

CP consists of both motor delay and motor disorder. All these conditions are also called the 'Developmental Disabilities'. They may be due to

(1) Mental Subnormality which is caused by various metabolic disorders, chromosome