

A Review of Hemiplegia in Young

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Abstract

A lady of 41 years presented to our hospital with acute onset right-sided hemiplegia of 2 months duration. The MRI confirmed ischemic infarction of the left internal capsule. The rapid plasma reagin (RPR) test for syphilis was positive. There was no recovery of weakness, and the deficit was same maximum from the onset. The presentation aims to review hemiplegia / Stroke in young and emphasize thinking of various causes & to take quick decisions.

Introduction

While a specific definition of “young stroke” is lacking, the vast majority of authors consider “young stroke” to pertain to individuals less than 45 years of age. Among the causes of hemiplegia in young, 85% are strokes, 13% infantile hemiplegia, 2% occur from miscellaneous causes.

The incidence of Stroke Inthe Young (56.9 per 100,000) seems to increase compared to a decade ago. (10% to 15% of strokes occur in people below the age of 40 years). We have to give more attention to such cases since the individual will be suffering severe morbidity with poor quality of life for a longer time, adding a burden to the family. It is important to differentiate Stroke & hemiplegia due to other causes in young since there could be a treatable condition. We present a case report of such young hemiplegia & review other etiology.

Case Presentation

A 41 yearsold female patient (Date of admission: 19/10/21; Date of Discharge: 22/10/21) was admitted for total weakness in the right side upper and lower limbs for two

months; the condition remained the same since the onset. Not a known case of Diabetes mellitus and hypertension. Past history of abortion at 6th month of pregnancy.

CA ⁺ - 8.6	A : G - 1.02
LP	Alp - 77
T.Cho - 172	SGOT - 39.7
TGL - 78	SGPT - 29.6
HDL - 41.0	ESR - 46
LDL - 106.2	CBC
VLDL - 15.6	Hb - 13.5
RFT	Pu - 38.9
RBS - 120.7	RBC - 4.57
Urea - 24.5	MCV - 85.1
Creat - 1.1	PLT - 335
U.Acid - 2.6	MPV - 7.3
Na ⁺ - 137	WBC - 7.90
K ⁺ - 4.8	N - 60.6
Cl ⁻ - 105	L - 35.0
LFT	M - 2.9
T.Bilirubin - 0.5	E - 0.7
D. Bilirubin - 0.2	B - 0.8
I. Bilirubin - 0.3	
T.Pro - 8.1	
Alb - 4.1	
Glo - 4.0	

Figure - 1

On examination, the patient was Well oriented; no trophic changes; pulse 96/mt. Regular; BP 110/80, Temperature normal CNS showed dense UMN facial nerve weakness on Right side; Spinal Motor system: Muscle bulk: normal; Power: MRC grading: proximal 1/5

distal and 0/5 in right UL and LL. Normal in left UL and LL; Spasticity noted in right UL and LL. Sensory system: intact Abdominal reflex not elicitable; Plantar: extensor in right side; normal left side. All Deep tendon reflexes were brisk in the right UL and exaggerated in LL. Other systems are normal.

Clinical Diagnosis: Cerebro Vascular Disorder involving left Middle Cerebral Artery with ischemic infarct in the left internal capsule.

Imaging study: MRI reported as “chronic infarct of left gangliocapsular region.”

The Rapid plasma reagin (RPR) (for syphilis) test was positive. Etiology probably syphilis. Other Lab reports were normal (figure- 1).

Discussion

This is a case of stroke in young; The cause is tertiary syphilis (confirmation tests could not be done since the patient went against medical advice). Stroke is more common in older patients; When it occurs in younger persons, the causes may be different and several. It is mandatory to search for a treatable cause.

Causes of hemiplegia in young:

Vascular etiology (Stroke) with various mechanisms is the commonest cause of hemiplegia in young,

1. Cerebral infarction 44.9%, Embolism 13.4%, (Patent foramen ovale and atrial septal aneurysm, Left ventricular diverticulum, Bacterial endocarditis, Atrial fibrillation, Mitral stenosis, Dilated cardiomyopathy). Internal carotid artery thrombosis 12.6%, cortical venous thrombosis 7.1%, subarachnoid hemorrhage 3.9%, arteriovenous malformation 3.1%, and aneurysm 1.6%.
2. Meningovascular Syphilis or Syphilitic Vasculitis: Progressive stenosis results in thrombosis and infarction due to smooth

concentric narrowing of the distal internal carotid arteries.

3. Infections: meningitis, focal encephalitis.

Other nonstroke etiologies could be Acute demyelinating diseases – Multiple Sclerosis, connective tissue disorders, Trauma-related, Metabolic abnormalities, Thrombophilias, Pregnancy, Migraine Drug use – contraceptives, Cocaine, Amphetamine, Heroin, other rare causes of stroke in young hypercoagulable states.

Genetic

Factor V Leiden, Protein C deficiency, Protein S deficiency, Ant thrombin III deficiency, Prothrombin gene mutation

Acquired

Lupus anticoagulant, Antiphospholipid antibodies, Oral contraceptives, Associated with neoplasia. Eclampsia, Premature atherosclerosis, Sickle cell disease, Vasculopathies Homocysteinuria Polycystic Kidney Disease Modifiable risk factors for stroke are Diabetes mellitus, dyslipidemia, smoking, hypertension, **Moyamoya Disease (MMD)** - Moyamoya vasculopathy.

A very rare cause of hemiplegia in young. It is seen in Japan & Korea, but cases are reported in India also. MMD is a progressive disease that does not improve. While MMD itself is not curable, surgery to provide alternative blood flow to the brain is successful. One study in India showed incidence is 50% children & 50% young adults. **MMD** affects the medium-sized arteries of the internal carotid or its terminal branches in the brain, and posterior circulation is also involved. It causes ischemic stroke, hemorrhagic stroke, and seizures. Sometimes it occurs bilaterally, confirming more possible diagnoses. The Etiology is unknown, but a possible neovascular response like fibroblast growth factor (FGF), transforming growth factor (TGF beta 1) & prostaglandins have been proposed as mediators. The possible role

of viral infection with Epstein-Barr virus has also been suggested. Confirmation, the diagnosis Diagnosis of MMD, is by the exclusion of other causes like negative vasculitis workup, Cerebral angiography (CT angiography (CTA)/digital subtraction angiography (DSA)) is employed. Treatment only surgical revascularization. A number of procedures have been devised to create collateralization

Conclusion:

At most, care and thorough investigations are warranted for hemiplegia in young. We should not miss treatable causes, and revascularization surgery may be considered early whenever possible. Strokes in young adults are a major public health problem, and research with standardized methodology is needed to give us more precise epidemiologic data. It is a burden to the family and society. That's why "WORLD STROKE

DAY - OCTOBER 29 BE FAST TO BEAT THE STROKE" is implemented every year.

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