ISSN No:-2456-2165

Ischemic Stroke in a Young Male Patient in Rural Uganda, Case report.

Dalton Kambale Munyambalu[1],*, Boniface Amanee Lumori[1,2], Franck K. Sikakulya[3] and Yves Tibamwenda Bafwa[1]
1 Department of Internal Medicine, Kampala International University-Western Campus, Uganda
2Department of Internal Medicine, Mbarara University of Science and Technology, Uganda
3Department of Surgery, Kampala International University-Western Campus, Uganda

Abstract:
Background: The etiology of ischemic stroke in young adult and adolescents is diverse and varies according to age and geographic region and despite a systematic diagnostic approach and more accurate diagnostic tools; stroke of undetermined etiology is the most common etiology among young stroke patients. In this case, we present a young patient who developed ischemic stroke at 23 years of age and had neither comorbidities nor risk factors.

Case presentation: A 23-year-old male presented to the hospital with two weeks history of disorders of speech, diffuse headache, and lack of sleep and right sided weakness of the body involving the face, the upper and lower limbs which was of sudden onset. The neurological examination revealed flat nasolabial fold to the right and smile asymmetry, he had a dysarthria and right sided hemiplegia. He had hyperreflexia and hypertonia of the right limbs with a positive ankle clonus and Babinski sign was positive. The initial non contrast head CT scan suggested an acute ischemic infarction. The patient was initiated on aspirin and clopidogrel plus fluoxetine. Neurological symptoms resolved after two weeks.

Conclusion: This case report has taught us that acute ischemic stroke is also a reality among young adults in rural areas, although that is very rare in our common practice. Findings from this case study will help to implement measures of primary prevention in the general population.

Keywords:- *Ischemic stroke, young, Rural Uganda, case report.*

I. INTRODUCTION

Approximately 15% of all ischemic stroke occur in young and adolescents and compared with stroke in older adults, when the stroke occurs in young it has a disproportionately large economic impact by leaving victims disabled before their most productive years [1]. The etiology of ischemic stroke in young adult and adolescents is diverse and varies according to age and geographic region and despite a systematic diagnostic approach and more accurate diagnostic tools; stroke of undetermined etiology was the most common etiology among young stroke patients [2]. In this case, we describe a young patient who developed ischemic stroke at 23 years of age and had neither comorbidities nor risk factors. The case is interesting because despite the investigations available and the clinical presentation of the patient there was no clear possible etiology of the stroke and in our region cerebrovascular accident is rare except among young adult with chronic illness (sickle cell disease, diabetes mellitus, hypertension, congenital heart disease, etc.), this case report can help the clinician to have an idea about the stroke among young adult and adolescent. Early diagnostic and treatment should be a priority for young patients with stroke and especially when the common causes are excluded. If those rare causes are known, they will not only be prevented but also their proper management shall avoid reoccurrence or re-stroke which is a serious challenge for clinicians and patients.

II. CASE PRESENTATION

A 23-year-old male, student, with any underlying chronic illness presented to the hospital with two weeks history of disorders of speech, diffuse headache, and lack of sleep and right sided weakness of the body involving the face, the upper and lower limbs which was of sudden onset. He reports no history of trauma, no history of fevers, confusion, blurred vision or amaurose, convulsions, changes in his mental status or any gastrointestinal symptoms. This is the first time for him to present such symptoms. The patient is the second born with no previous history of Diabetes mellitus, hypertension, congenital heart disease, hemoglobinopathy or coagulopathy. He reports any family history of chronic illness and he does not smoke, does not take alcohol or use of illicit substances.

On physical examination the patient was aware, not in respiratory distress, BP 100/70 mmHg, PR=84 /min regular, normal volume, symmetric and synchrone and saturated at 99%. The neurological examination revealed flat nasolabial fold to the right and smile asymetry, in terms of speech the patient had a dysarthria and he had a complete hemiplegia involving the right limbs (no movement 0/5 for both right limbs). He had also hyperreflexia and hypertonia of the right limbs with a positive ankle clonus and Babinski sign was positive, NIHSS: 9.The examination of other systems was normal.

The initial non contrast head CT scan showed in the left parietal lobe an area of focal gyral thickening and increase in density and a surrounding low attenuation areas and marked meningeal enhancement suggesting an acute ischemic infarction. (Fig. 1) The electrocardiogram and cardiac echography were normal and all the laboratory tests including white blood cell count, lipid profile, urea and creatinine, C-reactive protein and Erythrocyte Sedimentation Rate (ESR) were within the normal limits. The serology for HIV and Syphilis were negative. The patient was initiated on aspirin 300 mg and clopidogrel 300

ISSN No:-2456-2165

mg as loading doses then the doses were reduced to 75 mg per day plus fluoxetine 20 mg once daily. Physiotherapy was initiated three days after the admission. He showed great improvement in the neurological function over a period of two weeks, patient was able to walk by himself and the upper right limb was able to move against gravity and his speech was completely improved. No more neuroimaging studies such as MRI of the brain, carotid Doppler were performed.

III. DISCUSSION

Strokes in adults over the age of 65 years constitute the majority of strokes. However, approximately 25% of strokes occur in patients under 65 years of age. Common causes of these strokes include hematologic disorders, connective tissue disease, substance abuse, trauma, and cardioembolic diseases. About 30% of strokes in young adults have cryptogenic (undetermined) etiology [3, 4]. In fact, these undetermined causes of stroke are exceedingly common and even more frequent among young patients and the proportion is exceeding 50% in patients younger than 30 years [5].

In the literature, few cases are reported concerning ischemic stroke among young adults and those few ones found that males are more affected than females, all aged of less than 35 years. Yet the incidence of that ischemic stroke is still increasing among young. Possible explanations for the increasing incidence include artificial, i.e. improved awareness in the population or improved diagnostic accuracy; growing prevalence of known stroke risk factors, e.g. increasing prevalence physical inactivity, obesity, type 2 diabetes mellitus, increasing use of alcohol and illicit drugs; increasing prevalence of factors related to modern life style with limited scientific evidence and uncertain causality, e.g. 24/7 society syndrome including long work hours, shift work, long-haul flights, information overload, chronic stress, sleep deprivation; or external reasons, such as increasing exposure to particulate matters in the air [6]. A case of stroke in a young patient of 32 years was published in Bosnia and it was caused by an underlying disease, systemic lupus with secondary antiphospholipid syndrome [7].

In sub-Saharan Africa and in Uganda, some studies have been conducted about stroke but few are focused on stroke among young adults in rural areas. A study done in Kampala (urban) among 2789 young aged between 13-15 years with cerebrovascular accident, showed that cigarette smoking was a risk factor for ischemic stroke. Another study conducted in a rural setting (Masaka) among 5372 patients aged above 13 years revealed that hypertension (22.0%), abdominal obesity in females (71.3%) and current smoking were the risk factors for ischemic stroke. Moreover, about current smoking, males (13.7%) were more affected than females (0.9%) [8].

In Marrakech (Morocco) in 2014 a research revealed that the causes of ischemic stroke were from the cardioembolic origin with 43 cases (33.5%), the existence of 14 cases (11%) of syphilitic arthritis, and the 52 cases (40.6%) of unknown etiologies. The authors stress the difficulties faced on supporting ischemic stroke in southern Morocco in particular when concerned by the etiological finding and the rehabilitation after the acute phase of the stroke [9].

In our study, the case is a male gender aged 23 years, however without any notified traditional risk factor. The case of our patient can be classified among the stroke of unknown origin among young adults, because we have ruled out all common causes of stroke and investigated considering the tools/facilities available in our rural setting.

IV. CONCLUSION

This case report has taught us that acute ischemic stroke is also a reality among young adults in rural areas, although it is very rare in our common practice. Findings from this case study will help to implement measures of primary prevention in the general population. Further studies should focus about others causes (unknown) and more investigations (other imaging studies and blood tests) which were not considered in this study in order to ascertain the causes of cerebrovascular accident in young and therefore target and prevent them.

For our case, the prognosis is good since our patient is still young, the speech and the better motor response have come progressively in a short time. That comes also from the initial treatment and the continuous daily physiotherapy. Government or/and deciders should provide rural health institution with adequate investigations tools so that rare etiologies or cryptogenic causes of stroke among young adults will be well known (advocacy).

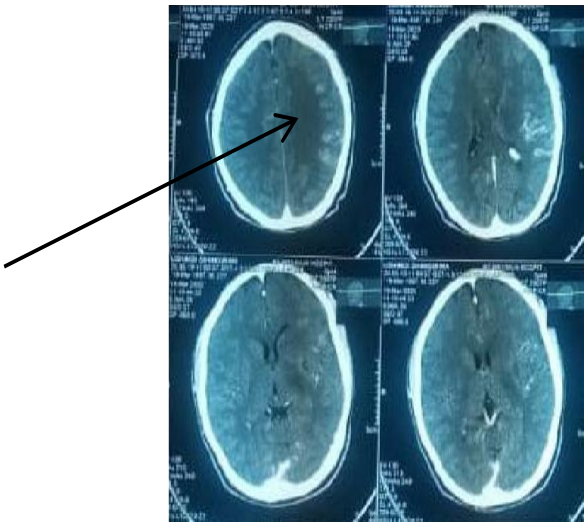

Fig. 1: Arrow indicating the ischemic area (infarction) on Brain CT at admission of the patient

- **Abbreviations**

BP: Blood pressure
HIV: Human Immunodeficiency Virus
NIHSS: National Institute of Health Stroke Scale
PR: Pulse rate

- **Competing Interests**
  No conflict of interest with respect to the research, authorship, and/or publication of this case report was reported.
- **Authors' contributions**
  All the authors were involved in the clinical management of the patient and they have contributed at the same level, they have read and approved the final version of the manuscript.
- **Informed consent**
  We got the consent from the patient after fully explaining the details of the case report.

REFERENCES

[1.] D. Smajlović, "Strokes in young adults: epidemiology and prevention," *Vascular health and risk management*, vol. 11 pp. 157, 2015. .
[2.] B. Singhal, J. Biller, M. S. Elkind, H. J. Fullerton, E.C. Jauch, S. J. Kittner,...and S. R. Levine, "Recognition and management of stroke in young adults and adolescents," *Neurology*, vol. 81, no. 12, pp. 1089-1097, 2013.
[3.] P. J. Mehta, S. Chapman, A. Jayam-Trouth, and M. Kurukumbi,"Acute ischemic stroke secondary to iron deficiency anemia: a case report," *Case Reports in Neurological Medicine*, vol. 2012, Article ID 487080, 5 pages, 2012.
[4.] K. Gopalratnam, K. A. Woodson, J. Rangunwala, K. Sena and M. Gupta, "A rare case of stroke secondary to iron deficiency anemia in a young female patient," *Case reports in medicine*, vol.2017, Article ID 1684631, 3 pages.
[5.] Rolfs, F. Fazekas, U. Grittner, M. Dichgans, P. Martus, M. Holzhausen,…and G.J. Jungehulsing, "Acute cerebrovascular disease in the young: the Stroke in Young Fabry Patients study," *Stroke*, vol. 44, no.2, pp. 340–349, 2013.
[6.] J. Putaala, "Ischemic stroke in the young: current perspectives on incidence, risk factors, and cardiovascular prognosis," *European stroke journal*, vol. 1, no. 1, pp. 28-40, 2016.
[7.] A. Nakicevic, D. Imamovic, A. Alajbegovic, M. T. Campara, B. Sahbaz, "Stroke among the young-case report," *Journal of the Neurological Sciences*, vol. 357, pp.363-423, 2015.
[8.] J. Nakibuuka, M. Sajatovic, E. Katabira, E. Ddumba, J. Byakika-Tusiime, and A.J. Furlan, "Knowledge and perception of stroke: a population-based survey in Uganda," *ISRN stroke*, 2014.
[9.] M. Chraa, N. Louhab, and N. Kissani, "Stroke in young adults: about 128 cases," *Pan African Medical Journal*, vol. 17, no. 1, 2014.