

Franklin Baltodano Ardón¹,  **A CASE REPORT OF A HEMORRHAGIC**
Indira Pineda Grillo²,  **STROKE WITH RIGHT HEMIPARESIS**
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Ключові слова: геміпарез, атаксія, неврологія, нервово-м'язовий

Abstract. A case report of a hemorrhagic stroke with right hemiparesis. Franklin Baltodano Ardón, Indira Pineda Grillo, Shirley Mireya Ortiz Pérez, David Marcelo Guevara Hernández. Cardiovascular diseases and dyslipidemia lead to complications such as cerebrovascular accidents and severe sequelae such as neurological deficits in different presentations depending on the affected area. The objective is to describe the clinical case of a patient with hemorrhagic cerebrovascular disease, presenting with right-sided hemiparesis and ataxia, as well as the therapeutic options employed in their rehabilitation process to improve their quality of life. The present investigation deals with a case report that provides relevant information before the implementation of a personalized interdisciplinary treatment, corresponding to a 53-year-old male patient with a history of hypertension and dyslipidemia. Outcome – the case reflects a patient with a neurological condition presenting challenges in communication and mobility, requiring a comprehensive approach to treatment and follow-up to address both acute symptoms and possible underlying impairments. The emergent approach in patients with stroke is determinant to reduce possible sequelae, a personalized comprehensive care involving an interdisciplinary team is essential to improve the prognosis on the patient's quality of life and functionality.

Реферат. Опис випадку геморагічного інсульту з правобічним геміпарезом. Франклін Балтодано Ардон, Індіра Пінеда Грілло, Ширлі Мірейя Ортіс Перес, Девід Марсело Гевара Ернандес. Серцево-судинні захворювання та дисліпідемія призводять до ускладнень, таких як порушення мозкового кровообігу, та важких наслідків, таких як неврологічні порушення, які можуть мати різну форму залежно від ураженої ділянки. Мета – описати клінічний випадок пацієнта з геморагічним цереброваскулярним захворюванням з правобічним геміпарезом та атаксією, а також терапевтичні варіанти, які застосовуються в процесі реабілітації для покращення якості життя. У цьому дослідженні наведено історію пацієнта 53 років з гіпертонічною хворобою та дисліпідемією, яка надає відповідну інформацію перед впровадженням індивідуального міждисциплінарного лікування. У статті наведено випадок пацієнта з неврологічним захворюванням, що викликає проблеми з комунікацією та мобільністю та вимагає комплексного підходу до лікування та подальшого спостереження для усунення як гострих симптомів, так і можливих прихованих порушень. Отже, невідкладний підхід до пацієнтів з інсультом є вирішальним для зменшення можливих наслідків, індивідуалізована комплексна допомога за участю міждисциплінарної команди має важливе значення для покращення прогнозу щодо якості життя та функціональності пацієнта.

Cerebrovascular diseases are caused by a blockage in the cerebral circulation that causes a disorder in one or more parts of the brain, this type of disease is a heterogeneous group of conditions that occur in blood

flow and cerebral vascularization, these alterations may be due to stenosis, thrombosis, embolism, or vascular rupture, which affect cerebral irrigation, producing an ischemic or hemorrhagic stroke. Strokes

are highly prevalent and often devastating, according to a study on the global burden of this disease, reports that worldwide stroke is the second leading cause of death after ischemic heart disease [1]. Hemorrhagic stroke is classified according to its location, either intracerebral hemorrhage or subarachnoid hemorrhage. The former is a hemorrhage in the brain parenchyma and the latter is a hemorrhage in the subarachnoid space. Hemorrhagic stroke is associated with severe morbidity and high mortality [2].

Hemiparesis is a clinical sign that is described in the literature as a motor lesion occupying damage in structures of the frontal area resulting from lesions in the central nervous system at the cortical level. They may be associated with other clinical signs such as ataxia, which is a gait control disorder due to lack of coordination of movement, these symptoms may be related to alterations in the cerebellum or neural connections. These types of affectations are a challenge in the clinical and rehabilitation areas, requiring integrated therapeutic approaches [3].

MATERIALS AND METHODS OF RESEARCH

The study is registered in Neurofit Ec case report database (CEINF00013) and approved by the research ethics committee of the comprehensive physical rehabilitation center (No. 6/2023 approval date November 21, 2023).

A 53-year-old male patient with a pathological history of hypertension and obesity, with a blood pressure of 180/100 mmHg, developed decompen-

sation, reason for hospital admission by the emergency medical team – further diagnosis. The pharmacological history – Losartan 100 mg oral daily.

Clinical data and diagnostic evaluation. During the physical examination: blood pressure 180/100 mmHg, heart rate 105 beats per minute, respiratory rate 25 per minute, SaO₂ 98%, body temperature 37°C. Patient somnolent, heart: rhythmic, good tone, lung fields clear and ventilated, abdomen with hydroaerial sounds present, no sphincter disturbance. Neurological examination: Glasgow scale 13/15 points, patient orientes in time, space, knows his name and family name speech, with motor transcortical aphasia, preserved judgment, preserved praxis. Cranial nerves: olfactory perceives odors well, optic without alteration, common ocular motor, trochlear or pathetic and abducens pupils reactive isochoric to light and accommodation, without presence of strabismus, trigeminal without motor or facial sensory alteration, vestibulocochlear right facial supranuclear palsy without auditory alteration, glossopharyngeal, vagus uvula slight deviation to the right, gag reflex intact, cough reflex intact, accessory right shoulder palsy. Motility, muscle tone, gait decreased in right hemibody, reflexes and trophism normal. Decreased superficial and deep sensibility in right hemisphere, negative meningeal signs.

Patient with neurological deterioration, and results of complementary tests reporting the following, total cholesterol: 326 mg/dl, HDL cholesterol: 36 mg/dl, triglycerides 414 mg/dl, normal hemoglobin, normal blood glucose (Table).

Laboratory results

Reference Values	Results	Reference Values	Results
Leukocytes: 9.58	(4.23-9.27)	Glucose: 112.40	(74-106 mg/dl)
Hemoglobin: 15.4	(13.7-17.5 g/dl)	Chlorine: 105.10 mmol/l	(98-107 mmol/l)
Hematocrit: 45.4%.	(40-54%)	Sodium: 140 mmol/l	(136-145 mmol/l)
Mean Corpuscular Volume: 88.3fl	(79-92.2 fl)	Potassium: 4.28 mmol/l	(3.7-5.10 mmol/l)
Lymphocytes: 22.2%.	(21.8-53.1%)	Urea: 40.40 mg/dl	(16-48.50 mg/dl)
Neutrophils: 65.4%.	(65.4-67.9%)	Creatinine: 0.96 mg/dl	(0.5-1.20 mg/dl)
Basophils: 0.8%.	(0.2-1.2%)	Ammonium: 85 g/dl	(27-102 g/dl)

Note. Source – patient's medical history.

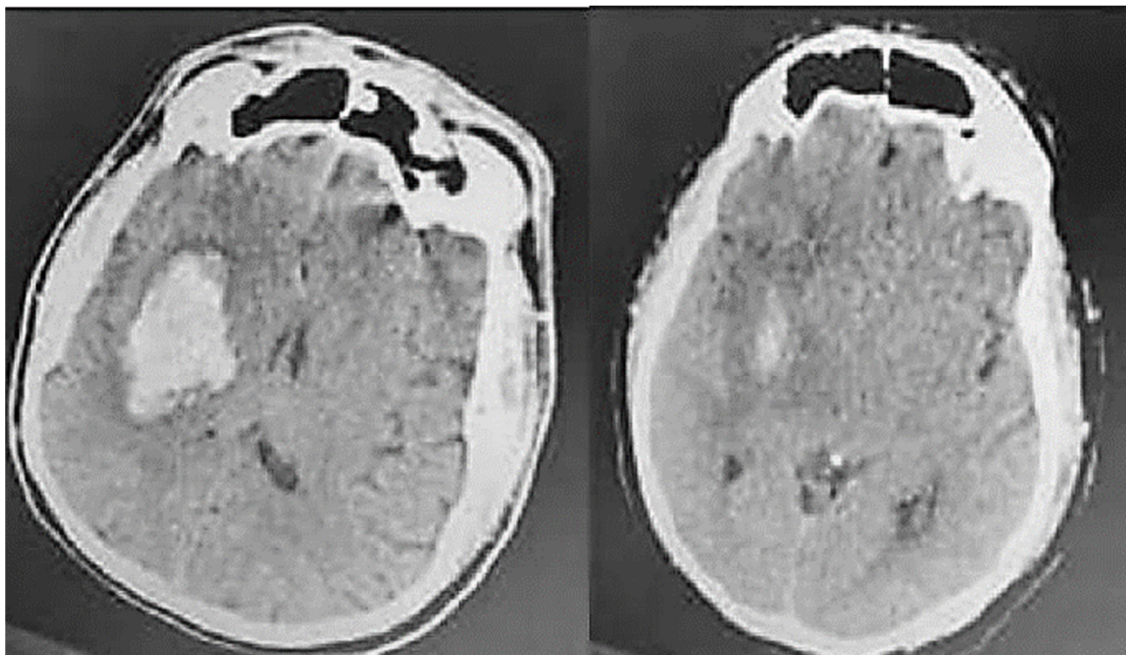
Complementary examinations: normal echocardiogram and electrocardiogram without rhythm alterations or ischemic lesions. Computed axial tomography describes a midline shift suggesting an expansive process, probably due to extensive cerebral edema in the right hemisphere. This type of finding is

critical and should be managed promptly to avoid permanent neurological damage. Significant cerebral edema is seen in the right hemisphere, causing compression of the right lateral ventricle and a midline shift to the left. In addition, an area of hyperintensity is seen in the left cerebral hemisphere,

suggestive of acute intracerebral hemorrhage. The location suggests that the hemorrhage is in the region of the basal ganglia and internal capsule (Fig.).

Therapeutic intervention. The patient was admitted to the Intensive Care Unit Neurology Unit with a diagnosis of right hemiparesis accompanied by aphasia and dysarthria, without loss of consciousness. Patient without feeding, with oxygen at 1 liter by nasal catheter with bed elevation at 45°, thermal curve

control every 8 hours, measures to prevent falls and pressure ulcers, daily general cleaning with chlorhexidine 2%, with intravenous treatment, saline solution 0.9% 1000cc saline solution, ascorbic acid 500 mg, B complex intravenously at 48 ml/h, atenolol 50 mg daily, losartan 100 mg daily, amlodipine 10 mg 8 pm c/day, metoclopramide 10 mg intravenously every 8 h, strict control of blood pressure.



Magnetic resonance imaging

RESULTS AND DISCUSSION

Seven days after admission, the patient showed improvement, blood pressure was stabilized with antihypertensive drugs and lipid-lowering drugs were added, and his alertness improved, reaching a Glasgow score of 15 points. At the same time, physiotherapy intervention was performed, where the patient was found bedridden and with a right hemiparesis due to lack of motor control, the assessment of muscle tone showed hypotonia, and the evaluation of sensitivity showed hypoesthesia in the muscles of the upper and lower limbs. As an initial measure, the nursing staff and family members were instructed on postural measures and care, which included: alignment of the trunk and extremities with the help of pillows, sitting with support, avoiding overload on the right glenohumeral joint. For this stage, work was carried out by means of proprioceptive stimulation of the right hemisphere with performing passive and active mobilizations that included trunk work, to reactivate the patterns to perform motion [4, 5].

In the subacute phase (2 months post stroke) the patient showed an improvement on the right sensitivity managing to perceive the objects with which the tests were performed, regarding the tonus some hypertonia in the flexor muscles was evidenced. We worked on sitting and standing using a therapeutic ball and task-oriented motor relearning, that is, making the movements more active, trying activities similar to those performed at home such as grasping objects in space or recreating patterns previously known to the patient. We worked with the patient on a mat on four points to train him for possible falls at home, since this was his main fear at the time of the interview to reaffirm the objectives for this stage. At the time of writing this paper our subject performs transfers with the help of a walker, tolerates sitting and performs activities at home with the accompaniment of his relatives, attends physiotherapy facilities where he continues his process [6, 7].

Dominguez et al. treat a patient with asymmetry of the cerebral ventricles, sinuous basilar trunk and vestibular alterations, a case like the present study for

the manifestation of important neurological symptoms. Although the conditions vary in age, history, and symptoms, both highlight the importance of a thorough evaluation, including imaging studies and laboratory tests, for an accurate diagnosis. In both cases, rehabilitation programs improved the patients' symptoms and quality of life [8, 9]. This reinforces the need for a comprehensive evaluation and the use of advanced techniques to address complex neurological disorders [10, 11]. In addition, interdisciplinary programs tailored to the specific needs of the patient could be implemented, including pharmacological, therapeutic, and psychological interventions [10, 12].

Finally, the results of the Dominguez study and current research on right hemiparesis and ataxia offer valuable insight into the importance of comprehensive evaluation and implementation of interdiscip-

linary rehabilitation programs to address neurological disorders. These findings support the need for individualized, evidence-based medical care that can improve quality of life [10, 13, 14].

CONCLUSIONS

The emergent approach in stroke patients is determinant to reduce the possible sequelae, a personalized comprehensive care involving an interdisciplinary team that combines medicine, pharmacology and physical rehabilitation are essential to improve the prognosis on the quality of life and functionality of the patient. We recommend the inclusion of professionals such as occupational therapists and psychologists in the interdisciplinary team who could improve and enhance the clinical conditions of each patient.

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