Reply to ''Hospital stroke registers: Similarities and differences''☆

Réplica al artículo «Registros hospitalarios de ictus: similitudes y diferencias»

Dear Editor:

It was with great interest that we read the letter in response to our recently published article[1] underscoring the importance and benefits of stroke registries, and we wish to thank the authors for their valuable remarks.

We agree that very few stroke registries have been published in our setting; this is especially significant in view of the high prevalence and great social impact of stroke. Prospective registries (not only for stroke, but for any condition) are a good working methodology and represent high-quality patient care. Furthermore, registries are essential to understand the natural history and trends of any condition; this is particularly relevant in the case of stroke, given the numerous diagnostic and treatment advances seen in stroke management. In addition to data from simple registries, it would be extremely helpful to have cumulative data and trend analyses such as those published by the team working at Hospital Universitari Sagrat Cor.[2,3] Likewise, a prospective registry is a source of data for future studies.

In summary, we thank the authors for their interest in our study and endorse their comments on stroke registries.

Conflicts of interest

The author has no conflicts of interest to declare.

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E. Palomeras Soler

Unitat de Neurología, Hospital de Mataró, Mataró, Barcelona, Spain

E-mail address: epalomeras@csdm.cat

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Early recurrence of cardioembolic stroke successfully treated with a second thrombectomy☆,☆☆

Recurrencia precoz de infarto cardioembólico tratada con éxito mediante una segunda trombectomía

Dear Editor:

Fibrinolysis with recombinant tissue plasminogen activator (rt-PA) improves stroke prognosis when administered within the first 4.5 hours of the ischemic event. The treatment is contraindicated in certain clinical situations, however, such as in early recurrence of stroke. According to recently published clinical trials,[1—5] intra-arterial mechanical thrombectomy after thrombolysis in proximal occlusions of intracerebral arteries achieves higher reperfusion rates and results in fewer clinical sequelae than thrombolysis alone. However, there is still little evidence on the feasibility and safety of this treatment for patients experiencing early recurrence of ischemic stroke. We describe the case of a patient undergoing 2 mechanical thrombectomies in 28 hours due to reocclusion of the right middle cerebral artery (MCA).

Our patient, a 58-year-old man, was an obese former smoker who experienced sudden-onset left hemiparesis and hemihypaesthesia (NIHSS = 13). A de novo atrial fibrillation (AF) was detected during the patient's transit to hospital. AF spontaneously reverted to sinus rhythm. A

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☆☆ This case report was presented in the outstanding posters section at the 67th Annual Meeting of the Spanish Society of Neurology under the title ''Doble intervencionismo: tratamiento de un reinfarto precoz'' (repeated thrombectomy for early recurrence of stroke).

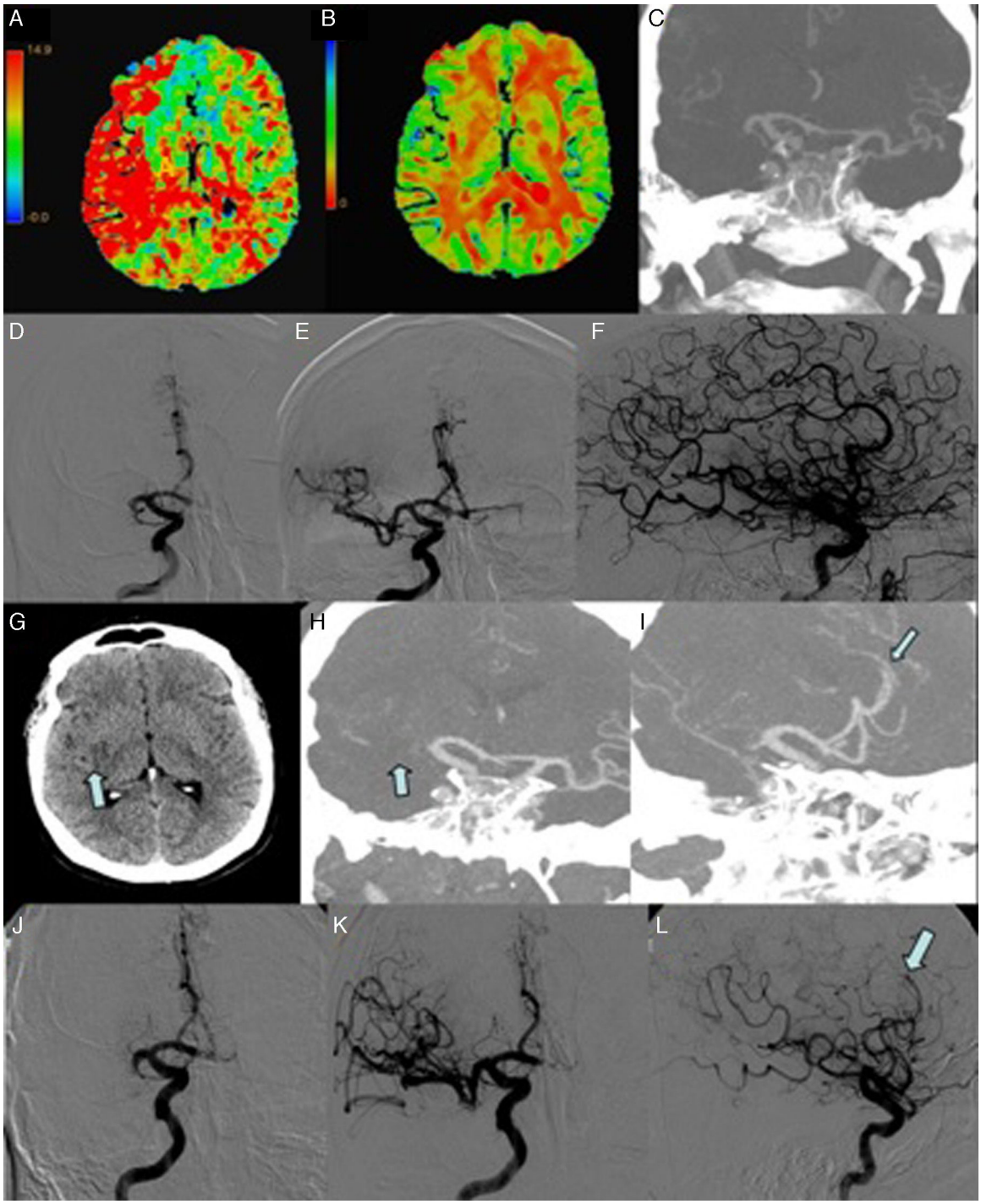

Figure 1 First ischemic stroke (A-F). (A) Multiparametric CT scan: map of mean transit time showing delayed blood flow in the territory of the right MCA. (B) Multiparametric CT scan: map of cerebral blood volume revealing low volume in the right lenticular nucleus. (C) CT-angiography: occlusion of the M1 segment of the right MCA. (D) Angiography: occlusion of the M1 segment of the right MCA. (E and F) Complete recanalisation (TICI grade 3) was achieved with 2 passes. 28 hours after the first event (G-L). (G) Brain CT scan showing a small infarction in the right insula and lenticular nucleus (arrow). (H) CT-angiography: occlusion of the M1 segment of the right MCA (arrow). (I) CT-angiography: occlusion of the A3 segment of the right ACA (arrow). (J) Angiography (AP projection): occlusion of the M1 segment of the right MCA. (K and L) Recanalisation of the MCA (TICI grade 2B) and persistent occlusion of the A3 segment of the right ACA (arrow).

CT scan performed upon the patient's arrival at hospital revealed no anomalies. Fibrinolysis was started 75 minutes from symptom onset, with no improvement. The patient was consequently transferred to our hospital to be evaluated for eligibility for neurosurgery. A brain CT-angiography detected a proximal occlusion of the right MCA (Fig. 1A-F). We conducted an arteriography; recanalisation was achieved using a stent retriever (TICI grade 3; time to recanalisation: 240 minutes). Our patient experienced no neurological sequelae 24 hours after the procedure and displayed sinus rhythm during monitoring. A follow-up CT scan performed 24 hours after thrombolysis revealed a hypodense lesion in the right insula and lenticular nucleus; intravenous heparin was administered as secondary prevention.

Twenty-eight hours after the first recanalisation procedure, and coinciding with an episode of AF, our patient displayed sudden-onset left hemiparesis, hemihypaesthesia, and hemianopsia (NIHSS = 14). A multiparametric CT scan revealed reocclusion of the right MCA and a favorable mismatch (Fig. 1G-L). A second mechanical thrombectomy achieved recanalisation (TICI grade 2B; time to recanalisation: 150 minutes). An occlusion in a distal branch (A3) of the right anterior cerebral artery (ACA) was detected but not treated. The second procedure achieved less satisfactory results (NIHSS = 6 at 24 hours); a follow-up brain CT scan revealed an increase in the volume of the previously detected ischemic lesion, affecting the right internal capsule.

We resumed anticoagulation with intravenous heparin 3 days after the second episode. A transthoracic echocardiogram revealed moderate ventricular dysfunction (LVEF = 35%) and posterior-inferior hypokinesia.

The rate of early recurrence of cerebral infarction depends on stroke etiology. Very early recurrence of thromboembolic events has been observed in prothrombotic states caused by malignant processes.[6] In our patient, reocclusion occurred at 28 hours from the first recanalisation procedure; this recurrence is considered to be ''early'' for cardioembolic stroke, given that the risk of recurrence in these patients is approximately 6.9% in the first 2 weeks, with a mean time to recurrence of 12 days.[7]

In view of the small size of the first infarction and the fact that our patient had no hemorrhagic complications, we started anticoagulation treatment according to the most recent American Heart Association stroke prevention guidelines.[8] We opted for intravenous unfractionated heparin, given its rapid anticoagulation effects and good safety profile. For these 2 reasons (early recurrence and anticoagulation), fibrinolytic treatment was contraindicated in the second stroke episode. Therefore, and given the presence of an intracerebral proximal occlusion, thrombectomy was found to be the only treatment alternative.

Very few cases similar to ours have been published in the literature, which may reflect a publication bias (cases with less favorable results may have not been published). In fact, to our knowledge only 2 published cases have described the potential benefits of repeated mechanical thrombectomy during the acute phase of stroke.[9,10] Laible et al.[10] described the case of a patient undergoing thrombectomy for the second time in 24 hours due to a prothrombotic state. Lee et al.,[9] in turn, published the case of a patient with AF who experienced a recurrence 6 days after the first procedure; this was successfully managed with repeated mechanical thrombectomy.

In our case, reocclusion was treated with a second thrombectomy; the second cardioembolic stroke was managed at an earlier stage, resulting in an acceptable clinical outcome and no complications associated with the procedure. Our case suggests that mechanical thrombectomy is a safe procedure for patients experiencing early stroke recurrence, leading to more favorable functional outcomes in a group of patients with no other treatment alternatives.

Conflicts of interest

The authors have no conflicts of interest to declare.

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S. Quintas[a,*], R. López Ruiz[a], Á. Ximénez-Carrillo[a], G. Zapata-Wainberg[a], F. Gilo[a], E. Bárcena-Ruiz[b], J. Vivancos[a]

[a] *Departamento de Neurología, Hospital Universitario de la Princesa, Madrid, Spain*
[b] *Departamento de Neurorradiología, Radiología Intervencionista, Hospital Universitario de la Princesa, Madrid, Spain*

[*] Corresponding author.
E-mail address: sonia.qg@gmail.com (S. Quintas).
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Cerebral cavernous malformation in a woman presenting with hemichorea: Response to haloperidol☆

Malformación cavernomatosa cerebral en mujer presentándose con hemicorea: respuesta al haloperidol

Introduction

Cerebral cavernous malformations (CCM), also known as cavernomas or cavernous haemangiomas, are vascular malformations of the central nervous system characterised by a well-defined collection of enlarged, thin-walled blood vessels with a single layer of endothelium and a thin, fibrous tunica adventitia layer, and containing blood components in different developmental stages.[1]

CCMs are usually located in the supratentorial region, subcortical parenchyma, basal ganglia, or brainstem.[2,3] Their prevalence, formerly estimated at 0.02% to 0.5%, has in recent decades increased to 0.4% to 0.9% due to the introduction of MRI in clinical practice.[4]

CCMs typically present between the ages of 20 and 40.[5] The most frequent clinical symptoms include seizures, headache, focal neurological signs, bleeding, and very occasionally, movement disorders.[6] Chorea, in particular, is rare in these patients; when it does occur, it is usually caused by involvement of the caudate nucleus. We present the case of a patient with hemichorea associated with a CCM in the contralateral insula and review published case reports of patients with chorea who were managed without surgery.

Case report

A 45-year-old woman was brought to the National Institute of Neurology and Neurosurgery in Mexico City due to a one-month history of ataxic gait and involuntary movements in the left side of her body. Left hemichorea had appeared spontaneously. The physical examination detected no alterations, whereas the neurological examination revealed choreic movements which were exacerbated by stress. Cognitive function, muscle strength, sensitivity, and cerebellar function were normal, and the patient displayed no pathological reflexes. An electrocardiogram, a complete blood count, and tests for erythrocyte sedimentation rate, serum electrolyte levels, hepatic and renal function, and thyroid profile all yielded normal results. The patient tested positive for antinuclear antibodies and negative for anticardiolipin antibodies and rheumatoid factor. A cranial CT scan revealed only a small distortion at the level of the posterior portion of the internal capsule. A T1-weighted brain MRI sequence displayed a hyperintense lesion in the right insula; a T2-weighted sequence revealed a heterogeneous hyperintense lesion with a hypointense rim measuring 6.93 mm × 7.09 mm × 8.09 mm. A gradient-echo sequence displayed an irregular mass with an isointense centre and a hypointense rim, with no mass effect. An additional MRI scan performed 4 months later revealed no changes (Fig. 1).

Haloperidol dosed at 10 mg/day led to complete resolution of choreic movements after 2 months.

Discussion

Chorea is characterised by abrupt involuntary movements resulting from a continuous flow of random involuntary muscle contractions.[7,8] Onset of chorea may be acute or subacute and may have a number of causes, including infection, autoimmune diseases, genetic mutations, neurodegeneration, infarction, neoplasia, drug use, and metabolic diseases.[7] Unilateral choreic movements, known as hemichorea, represent approximately 0.7% of all movement disorders. Hemichorea usually appears in patients with structural conditions, such as vascular lesions in the contralateral side.[2] In the light of the above, we concluded that left hemichorea in our patient was caused by the contralateral CCM.

The pathophysiological mechanisms of chorea are poorly understood. This condition may be due to dysfunction of a neural network connecting motor cortical areas and a group of subcortical nuclei to the basal ganglia.[9] Furthermore, several studies suggest that selective impairment of striatal neurons projecting to the lateral globus pallidus[10] disrupts basal ganglia connectivity, which may in turn lead to chorea.[11,12]

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