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Original article

CLINICAL DIAGNOSTIC DIFFICULTIES IMAGING CEREBRAL ISCHEMIA IN YOUNG VERSUS SM: RECOVERY METHODS

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Abstract

Objectives. Stroke is a commonly used but imprecised term that describes a frequently devastating clinical event-the sudden onset of a persistent neurologic deficit, usually secondary to blockage or rupture of a cerebral blood vessel. Ischemic stroke are divided in three subtype: large artery or atherosclerotic infarction, cardioembolic infarction and small vessel or lacunar infarctions.

Multiple Sclerosis (synonyms: multiple sclerosis, lenconebraxita) is a condition characterized by multiple foci of demyelination scattered white matter of the central nervous system.

Materials and methods. We present the case of a female patient aged 39 years, with initially diagnosis of ischemic stroke and after one year with multiple sclerosis relapsing remitting form.

Results. We present the case of a patient aged 39 years, diagnosed with ischemic carotidian stroke without cardiovascular risk factors or metabolic, are presented to our clinic for decrease of force at right limb and dysarthria with unknown causes. Patient recover completely motor deficit after 1 month and she's diagnosis was ischemic stroke in the middle cerebral branch with unknown causes. After one year patient develop left motor deficit, with paresthesia on the left side of the body, with astereognosia and left ademolexia and at discharge diagnosis was Multiple sclerosis relapsing-remitting form in concordance with clinic and imagistic images..

Conclusion. The clinical course of classic Multiple sclerosis is highly variable. MRI has fundamentally changed the clinical evaluation of patients with Multiple sclerosis.

Key words: ischemic stroke, multiple sclerosis, young adult, recovery.

Introduction

Stroke is a commonly used but imprecised term that describes a frequently devastating clinical event-the sudden onset of a persistent neurologic deficit, usually secondary to blockage or rupture of a cerebral blood vessel. Ischemic stroke are divided in three subtype: large artery or atherosclerotic infarction, cardioembolic infarction and small vessel or lacunar infarctions.

Multiple Sclerosis (synonyms: multiple sclerosis, lenconebraxita) is a condition characterized by multiple foci of demyelination scattered white matter of the central nervous system.

The four main symptoms of the disease are added:

- Symptoms sensitive translated primarily by numbness that can add vibration and discriminative sensitivity disorders, lack of sensitivity rarely termoalgeziã the Brown-Sequard syndrome. At flexion of neck sometimes appear electrifying sensations in the limbs being Lhermitte's sign. This looks like a symptom of demyelinating sensory level cervical spinal cords. Lhermitte's sign is useful for the diagnosis of multiple sclerosis, but is encountered in

traumatic lesions or cervical spinal compression.

- Symptoms of the brainstem. In addition to vestibular syndrome can meet eye paralysis translated by diplopia, paresthesia in the trigeminal territory, trigeminal neuralgia.

- Mental Damage in Multiple Sclerosis rare but can occur in some patients in advanced stages of the disease.

A maximum recovery point is reached in the first 6-9 months, after which the progresses are no longer that significant. Abandoning systematic recovery from various reasons predisposes to tendinous and capsulo-articular reactions.

The prolonged bed immobilization and passive non-immobilized cases develop achilean retraction, humeral capsulo-articular retraction and algo-dystrophic syndromes. At this stage it was noticed a net benefit from active kinetotherapy in the case of ACA territory stroke (hemiparesis with crural predominance) and a favorable evolution in the case of ACM stroke (hemiparesis with facio-branchial predominance) where prehension and the fine movements of the fingers were incomplete.

Thus, the practice of a systematized recovery

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over the first 6-9 months seems to ensure important progress, imposing the realization of a complex, yet individualized, work scheme in order to facilitate psycho-social reintegration.

Materials and methods

We present the case of a patient aged 39 years, diagnosed with ischemic carotidian stroke without cardiovascular risk factors or metabolic, are presented to our clinic for decrease of force at right limb and dysarthria with unknown causes.

Results Patient Name: _____ Rater: _____ Date: ___ / ___ / ___ :	
Activity	Score
Feeding 0 = unable 5 = needs help cutting, spreading butter, etc., or requires modified diet 10 = independent	0 5 10
Bathing 0 = dependent 5 = independent (or in shower)	0 5
Grooming 0 = needs to help with personal care 5 = independent face/hair/teeth/shaving (implements provided)	0 5
Dressing 0 = dependent 5 = needs help but can do about half unaided 10 = independent (including buttons, zips, laces, etc.)	0 5 10
Bowels 0 = incontinent (or needs to be given enemas) 5 = occasional accident 10 = continent	0 5 10
Bladder 0 = incontinent, or catheterized and unable to manage alone 5 = occasional accident 10 = continent	0 5 10
Toilet Use 0 = dependent 5 = needs some help, but can do something alone 10 = independent (on and off, dressing, wiping)	0 5 10
Transfers (bed to chair and back) 0 = unable, no sitting balance 5 = major help (one or two people, physical), can sit	0 5 10 15



10 = minor help (verbal or physical) 15 = independent	
Mobility (on level surfaces) 0 = immobile or < 50 yards 5 = wheelchair independent, including corners, > 50 yards 10 = walks with help of one person (verbal or physical) > 50 yards 15 = independent (but may use any aid; for example, stick) > 50 yards	0 5 10 15
Stairs 0 = unable 5 = needs help (verbal, physical, carrying aid) 10 = independent	0 5 10
TOTAL (0 - 100)	_____

Modified rankin scale:

- 0 No symptoms at all
- 1 No significant disability despite symptoms; able to carry out all usual duties and activities
- 2 Slight disability; unable to carry out all previous activities, but able to look after own affairs without assistance
- 3 Moderate disability; requiring some help, but able to walk without assistance
- 4 Moderately severe disability; unable to walk without assistance and unable to attend to own bodily needs without assistance
- 5 Severe disability; bedridden, incontinent and requiring constant nursing care and attention
- 6 Dead (Rankin J., 1957, Bonita R et al., 1988, Van Swieten JC et al.1988)

NIHSS scale:

- 0= normal
- 1-4= minor stroke
- 5-15= moderate stroke
- 15-20= moderate/severe stroke
- 21-42= severe (Bradley G Walter et al, 2004)

CT scan was normal at onset. **Clinical criteria was performing** NIHSS (NIH Stroke Scale): 25 points, Modified Rankin Scale: 5 and Barthel index: 0. Cerebral MRI on 72 hours after the onset show: multiple hyperintense lesions in the centrum semiovale and subcortical white matter with two gadolinium enhancing in the frontoparietal right lobes.

We initiate a recovery kinetic programme and at discharge - NIHSS (NIH Stroke Scale): 15 points, Modified Rankin Scale: 3 and Barthel index: 85 and the diagnosis at discharge was Multiple sclerosis relapsing-remitting form.

Discussion

The history revealed recurrent episodes of right hemi-body numbness transitories. Patient is not a smoker, do not consume oral contraceptives and has no history of cerebrovascular disease in the family. CT scan was normal at onset. **Clinical criteria was performing** NIHSS (NIH Stroke Scale): 20 points, Modified Rankin Scale: 5 and Barthel index: 5.

Imagistic criteria

Cerebral MRI on 72 hours after the onset was normal. Echo cord and carotidian Doppler was normal. We perform laboratory test for possible vasculopathies associated with collagen-vascular disease was normal.

We initiate a kinetic programme following:

- promoting the activity of the antagonists by the inhibition of the spastic muscles (the agonists)
- promoting a complex movement scheme
- promoting the control of the proximal muscles during some increased performance exercises



- promoting the motor control of the intermediary joints.

In the medium or spastic stage, the characteristics are:

- the muscular tonus is high – hypertonicity is installed
- the osteo-tendinous reflexes on the affected side are increased
- the initiation of movement is improved, there can be made movements in more difficult positions, but the control of the movement is still insufficient because of spasticity
- usually, the tonus of the upper limb flexors and of the lower limb extensors is greatly improved

The following set of exercises is one of those used in the study:

- with the arm raised at different levels, there are made extensions-flexions of the elbow, the hand with spread fingers is taken to the opposite shoulder, thus making movements above or below the horizontal, the sports teacher opposes resistance on the shoulder both for the forward and the backwards movements; the lowered or raised position of the elbow entails the mobility of the scapula
- from the lateral decubitus, the training of the lower limb for walking in order to independently mobilize the joints: the hip is maintained flexed and the knee is extended-flexed, then the hip is maintained extended and the knee is moved; concomitantly, independently from the coxofemoral and knee movements, the foot is flexed-extended. These movements are trained (are facilitated) in the dorsal decubitus
- from ventral decubitus with forearm support, the shank is flexed and maintained at different angles
- rolling from dorsal to lateral and ventral decubitus
- from the four limbs position, the weight of the body is alternatively transferred on the paralyzed limbs: forwards-backwards and left-right balancing, gradual raising of a healthy limb, than both
- also from the four limbs position, the patient raises at first the head, then the torso, remaining only on knee support
- from the kneeled position, the teacher balances the body from side to side, especially forwards

- seated on a stool, with hip and knee flexed at a 90° angle, with the flexed foot, the heel in support on the floor, the weight is increased on the affected side: the teacher stimulates with the point of the fingers, the sole and the toes in order to release dorsiflexia (Lee J-M et al , 1999)
- from the seated position, the upper limb is raised with the elbow stretched, the hand

Patient recover completely motor deficit after 1 month and she's diagnosis was ischemic silvian stroke in the middle cerebral branch with unknown causes. After one year patient develop left motor deficit, with parestesia on the left side of the body, with asteroagnosia and left ademolexia.

The Barthel Index consists of 10 items that measure a person's daily functioning specifically the activities of daily living and mobility. The items include feeding, moving from wheelchair to bed and return, grooming, transferring to and from a toilet, bathing, walking on level surface, going up and down stairs, dressing, continence of bowels and bladder.

The higher the score the more "independent" the person. Independence means that the person needs no assistance at any part of the task. If a person does about 50% independently then the "middle" score would apply. (Mahoney, Barthel, 1965).

Conclusion

1. The clinical course of classic Multiple sclerosis is highly variable. MRI has fundamentally changed the clinical evaluation of patients with Multiple sclerosis.

2. Transient evolution of symptoms even in young patients with no apparent risk factors requires differential diagnosis with Multiple sclerosis. (Hankey Gjet et al ,1992, Hu FB et al, 2000)

3. Young patient with normal conventional imaging but transient symptoms and focal neurological deficits require laboratory investigations, biochemistry and imaging extended.

4. Many patients may present with one neurologic deficit and at onset without MRI changes or viceversa may present one neurologic deficit, with related white matter lesions on MR imaging not fulfilling criteria for the conclusive diagnosis of multiple sclerosis.

5. The general accuracy of MR imaging for prediction of this clinical conversion is about 68% (Korteweg et al, 2006).



6. Occupational and physical therapy applied postoperatively had an important role in social rehabilitation of the patient.

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