CLINICAL ASPECTS IN MULTIPLE SCLEROSIS

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Abstract: The first appearance of various combinations of motor, sensory, coordination, visual, and cognitive impairments, as well as symptoms of fatigue and urinary tract dysfunction compatible with central nervous system involvement in young patients, raises the possibility of multiple sclerosis. The gradual resolution of these symptoms during a period of days to weeks further supports this diagnostic entity. Clinically isolated syndrome is the first acute clinical demyelinating event with evidence of subclinical demyelination on the brain or spinal cord MRI. Pediatric multiple sclerosis represents a particular MS subgroup with provocative diagnostic. Problems of cognitive dysfunction and psychosocial adjustment have particularly serious implications in both children and teenagers with multiple sclerosis.

Cuvinte cheie: semne, simptome, scleroza multiplă, sindromul clinic izolat

Rezumat: Prima apariție a diverselor combinații de tulburări motorii, senzitive, de coordonare, vizuale și cognitive, precum și simptome ca oboseluța și disfuncția tractului urinar, compatibile cu implicarea sistemului nervos central la pacienții tineri, ridică suspiciunea de scleroză multiplă. Atenuarea graduală a acestor simptome pe o perioadă de zile, săptămâni, susține mai departe acest diagnostic. "Sindromul clinic izolat" este prima manifestare clinică de demielinizare cu dovada IRM a demielinizării subclinice la nivelul creierului și mădăvei spinării. Scleroza multiplă la copii reprezintă un subgrup particular cu diagnostic provocator. Problemele disfuncției cognitive și a integrării psihosociale au implicații serioase particulare atât la copiii cât și la tineri cu scleroză multiplă.

Multiple Sclerosis (MS) is an inflammatory, demyelinating, chronic disorder of the central nervous system (CNS) of unknown etiology, based on autoimmune mechanisms that attack myelin’s proteins (mediated by T cells) and associating an axonal injury/damage process. It is characterized by the existence of demyelinating foci called plates. These vary in size from millimeters to centimeters, are multiple and they spread mostly in the white matter and the spinal cord. MS represents the most frequent pathology in terms of young subject’s handicap.

In Romania there are not recent statistics that show the exact number of Multiple Sclerosis patients. According to some epidemiologic studies made in the 80’s, there are about 35-40 cases of MS in 100,000 people (1).

Although the disease usually has its onset at age 20-40, there are cases when it affects children or adults over the age of 50, women being affected twice as much as men (2).

Clinical manifestations are variable, depending on the way the plates are spread. The main myelinating paths of the CNS, motor, sensitive, cerebral and optical are involved.

There are several characteristics signs and symptoms that might suggest Multiple Sclerosis as a possible diagnosis, particularly in young subjects.

1. Motor disorders are due to corticospinal tract involvement. Patients may develop monoparesis, paraparesis, hemiparesis/ hemiplegia, quadriparesis/ quadriplegia. Lower extremities are usually more affected than the upper. Neurological examination shows weakness, spasticity, hyperactive reflexes, clonus, Babinski reflex, Hoffmann sign, the disappearance of abdominal skin reflexes.

2. Visual anomalies: optic neuritis is the frequent onset sign of MS (in about 25 % of the MS patients and mostly children), usually unilateral in adults and bilateral in children. It is characterized by partially or totally loss of vision, usually unilateral and sometimes bilateral (simultaneously or successively). Optic neuritis is preceded or accompanied by pain in the orbit accentuated at eye movement; it might recidivate on the same side or on the opposite one. Fundoscopy results are normal in the beginning (“the patient sees nothing and the doctor sees nothing.”) and later appears a pallor of the optic disc. The recovery of visual functions is complete in almost half of cases. After the recovery, a transitory decrease of visual acuity might appear again at effort or at an increase of the body’s temperature (Uthoff phenomenon). The effect on the optic nerve is shown by the alteration of visual evoked potentials (the elongation of latency of the wave P100). More than half of the patients who present optic neuritis will develop other MS signs, the risk being lower if the MRI doesn’t reveals demyelinating lesions (3-6).

3. Sensitive disorders: paresthesias under the form of tingling, constriction sensations; disesthesias (often described as a burning, itching, pins and needles); Lhermitte sign (an electrical sensation that runs down the back and into the limbs, and is produced by bending the neck). The objective disorders are mostly due to posterior columns involvement and affect the vibration sensation and the position of inferior limbs’ fingers. Pain is a common symptom for MS patients (in almost 50% of the cases). There are different types of pain, such as: trigeminal neuralgia, joint pains, central pain (7,8).

4. Cerebellar events: gait and balance disorders, limbs
or body ataxia, scanning speech and intention tremor, often invalidant. The combination of nystagmus, scanning speech and intention tremor is known as the Charcot’s triad.

5. Brainstem impairment: diplopia is frequent, mostly connected with internuclear ophthalmoplegia (INO) by the impairment of the medial longitudinal fasciculi which is responsible for communication between the two eyes by connecting the abducens nucleus of one side to the oculomotor nucleus of the opposite side. The presence of bilateral INO at a young adult is highly evocative of MS. The trigeminal neuralgia affects 1-2 % of the MS patients, manifests itself with intense pain episodes and hypesthesia in the trigeminal nerve, associated with the disappearance of the corneal reflex on the same side. We can also find a vestibular central syndrome with vertigo and nystagmus (deafness is rare, but the alteration of auditory evoked potentials is frequent), a pseudobulbar syndrome characterized by dysarthria and deglutition problems, and also a facial nery paresis (3.9).

6. The bladder dysfunctions appear in at least 80% of MS patients, the most common problem is incontinence, but frequency, urgency, nocturia, sensation of incomplete urination also appear. These problems expose patients to repeated urinary infections (10.1).

7. The intestinal disorders are rare, patients complain of constipation, diarrhea and incontinence for feces.

8. Sexual dysfunction: in MS prevalence is 45-70% in women and 70% in men, the most commonly described symptoms in men are erectile and ejaculatory dysfunction and in women decreased libido, lack of orgasm, difficulty in vaginal lubrication (12 ).

9. Psychiatric disorders: depression is the most common disorder, characterized by irritability and anxiety associated with suicidal ideation, diurnal variation of mood, anger and euphoria (3.14).

t. The cognitive impairment occur in 40-60% of cases of MS regardless of clinical form. It may be the major source of social and occupational disability and the lower quality of life. The functions most affected are: memory, attention and processing speed information, rarely may occur a subcortical type dementia. Cognitive disorders associate with neocortical atrophy, third ventricular width, hippocampal atrophy, atrophy of corpus callosum (15-20).

More recent imaging and pathological studies have shown neocortical abnormalities in patients with MS, which can be detected in early stages of the disease and that, at least in part, do not correlate with the accumulation of lesions in the white matter. Third ventricular width may have a predictive value for cognitive dysfunction. Atrophy of corpus callosum is frequently observed in MS and the anterior body is especially interested (17,18,21,22).

11. Other symptoms:
   a) Fatigue is common among patients with MS,

   b) Paroxysmal symptoms are a group of symptoms that occur suddenly, are expanding in a few seconds, it takes seconds or minutes, occur several times during the day and leaves no residual deficits. Clinically, they can take very different aspects: pain, dysarthria, ataxia, paresthesias, tonic seizures (spasm in flexion of the hand and elbow with extension of the lower leg).

Depending on developments, The National Multiple Sclerosis Society classifies 4 types of disease:

- relapsing remitting (RRMS)
- secondary progressive (SPMS)
- primary progressive (PPMS)
- progressive relapsing (PRMS)

The most common is relapsing remitting form.
A proper management of Multiple Sclerosis may improve the social and professional activity and the quality of life in both young patients and children.

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