

ACTIVATED PROTEIN C RESISTANCE ASSOCIATED WITH THE COMMON CAROTID ARTERY THROMBOSIS IN THE CASE OF A YOUNG PATIENT

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Abstract: The activated protein C resistance (factor V Leiden deficiency) represents the most common risk factor for thromboses which is inherited. Underdiagnosed as prevalence and reported in the cases of venous thrombotic pathology can be also associated with arterial thrombosis. We present the case of a 39 years old patient having transient neurological symptoms in childhood, uninvestigated, who presented a cerebral ischemic stroke due to a proximal common carotid artery thrombosis on the left side.

Rezumat: Rezistența la proteina C activată (deficitul de factor V Leiden) reprezintă cel mai comun factor de risc pentru tromboză moștenită. Subdiagnosticat ca prevalență și raportat în cazurile de patologie trombotică venoasă se poate asocia și cu tromboze arteriale. Prezentăm cazul unui pacient de 39 de ani cu manifestări neurologice tranzitorii în copilărie, neinvestigate, care a prezentat un accident vascular cerebral ischemic (cerebral ischemic stroke) datorat unei tromboze proximale de arteră carotidă comună stângă.

INTRODUCTION

The activated protein C resistance (factor V Leiden deficiency) represents the most common risk factor for thromboses which is inherited. The prevalence in Europe and North America is of 5% from the general population. Underdiagnosed as prevalence and reported especially in the cases of venous thrombotic pathology can be also associated with arterial thrombosis (1).

CASE PRESENTATION

In this paperwork we present the case of a 39 years old patient, caucasian, of urban origin, having a university education, in childhood presenting a history of repeated problems of transient "neuromotor instability" at the legs, non-investigated, who is hospitalized accusing: lumbar pain, pain in the sacro-iliac joints, intermittent sphincter incontinence, epigastric pain, diarrhea (2 times/day), flatulence.

The patient was already under observation for ankylosing spondylitis (the MRI at the sacro-iliac joints being inconclusive). As his personal history we also remember problems of duodenal ulcer, appendectomy, kidney stones, hepatic steatosis, irritable bowel, ex drug user.

The general examination in hospitalization showed a patient of 172 cm height and 78 kilos weight, having the abdomen meteoroids, painful to touch in the epigastrium and in the right hypochondrium, palpable liver at 2 cm under the sliding along the edge right costal, impalpable spleen, the physical examination at the rest of apparatus and systems being within normal limits. The neurological examination in hospitalization showed lumbar pain, a subtle spastic paraparesis with a sions predominantly left paresis, exaggerated bilateral ROT, bilateral Babinski sign, hypoaesthesia with T11 sensitivity level, urinary incontinence.

The investigations are continued starting with the presumptive diagnosis of: Lumbar vertebrae myelopathy. Ankylosing spondylitis – under observation.

The laboratory examinations regarding the inflammatory and autoimmune line were normal. HBsAg – negative, Ac HCV – negative

The examination of LCR was normal: colorless and clear aspect, glucose = 76 mg/dl, chlorides = 115, 8 mEq%, albumin = 0,57 g/l, elements =2/mm³, Pándy reaction – negative. The laboratory investigations (chest x-ray, lumbar-sacral X-ray, pelvis / sacro-iliac joints X-ray) showed incipient changes of osteoarthritis. The abdominal ultrasound revealed a normal aspect.

During investigations the patient received a painkiller, muscle relaxant, anti-inflammatory, anti-secretive gastric, antispasmodic treatment but the lumbar pain, the sacro-iliac pain, the sphincter incontinence, the soft consistency stools had persisted.

The neurological examination, three days after the hospital admission: cranial nerves without abnormal signs, the legs having a mild spasticity, the walking being a little spastic, normal coordination, ROT more vivid at the legs - bilateral, cutaneous plantar reflex insensitive bilateral, without sensitivity disturbances, urinary incontinence, aware, tempo-spatially oriented.

Four days after the hospital admission, during the thoraco-lumbar spine MRI examination, not revealed pathological changes at this level, the patient presents a motor deficit of right limbs suddenly installed, difficulty in standing and walking, speech disorder of the aphasic type, partially remitted after few hours.

The next day, he presents an episode of generalized tonic-clonic seizures, followed by right hemiplegia and mixed

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aphasia predominantly expressive, further showing also neurological signs of brainstem damage.

The native and contrast cerebral CT-scan shows a left middle cerebral artery ischemic stroke in evolution (fig. 1).

Figure no. 1 Cranial CT examination with a left middle cerebral artery ischemic stroke

The Echo-Doppler examination of the cervical vessels and the angio CT examination performed later reveals an occlusion caused by a proximal thrombosis of the left common carotid artery. The patient's physical condition did not also allowed the performing of a transcranial Doppler examination.

The Carotid Doppler ultrasound shows slim arterial walls at the level of the right carotid axis, without any occlusions or stenosis. The left common carotid artery well seen at the ultrasound examination and having absent blood flow. The subclavian arteries having normal blood flow. The vertebral arteries having bilateral compensatory increased blood flow. The ophthalmic arteries having normal blood flow bilateral (fig. 2).

Fig. 2 The ultrasound of the cervical arteries without any Doppler signal at the level of the right common carotid artery

The Doppler ultrasound of the heart showed normal relations, no embolism conditions emphasized.

The CT angiography carried the next day confirmed the complete thrombosis of the left common carotid artery at the base. (fig. 3).

The toxicological examination was negative for the main drug classes.

The laboratory investigations at the haematological level revealed a syndrome of resistance at the activated Protein C (factor V Leiden deficiency).

Further the patient got an antiplatelet and anticoagulant treatment. He had 2 episodes of upper gastrointestinal bleeding treated by a conservative treatment

At the hospital discharge the patient presented spastic quadriplegia having predominantly right hemiplegia, mixed aphasia predominantly expressive, mild dysphagia, internuclear ophthalmoplegia, urinary incontinence.

Figure no. 3. The cervical CT angiography with left proximal occlusion of ACC

The patient was released from hospital having the diagnosis: **Thrombosis of the left common carotid artery at the origin. Cerebral infarction in the territory of the middle cerebral artery and left posterior cerebral artery. Tetraplegia with predominantly right hemiplegia. Expressive aphasia. Brainstem ischemic stroke simultaneously. Resistance to activated protein C (factor V Leiden deficiency).**

The instructions at the hospital discharge were in favour for continuing the anticoagulant therapy and the hospitalisation in a shelter-hospital in order to continue the specialized treatment.

DISCUSSIONS

Cazul This medical case raised issues of differential diagnosis regarding the etiology of the cerebral infarction: atherothrombotic, cardioembolic, hypoxia, fibromuscular dysplasia, common carotid artery dissection, inflammatory diseases of the large arteries and also other causes of cerebral infarction in children and young adults.

The particularities of the case presented consist of:

- the young age of the patient,
- the possible ischemic transitory distress at the level of the Adamkiewicz artery (manifested through paraparesis and transient sphincter disorders) associated with left common carotid artery thrombosis,
- the emphasizing of the resistance syndrome at the activated protein C considered to be the etiological factor for the clinical manifestations of the patient.

A review of the specialized literature shows that few cases of arterial thrombosis due to this kind of anomaly were described; the most frequently involved in the pathology being the venous circulation where more cases of de venous thrombosis associated with the resistance syndrome at the activated protein C are mentioned.

The activated protein C resistance syndrome (APCR) or the factor V Leiden deficiency represents the most common risk factor for thrombosis which is inherited. The anomaly is transmitted dominant autosomally with variable penetrance. The prevalence in Europe and North America is of 5% of general population. The APCR occurs in both genders, presenting the same risks for everyone, the homozygotes present thromboses at the younger ages than the heterozygotes. The risk of thrombosis is higher 5-10 times at the heterozygotes and 50-100 times at the homozygotes than at those without gene. The high prevalence of the gene at the population increase the chance of the coexistence of other thrombophilia (1,2).

Some of the experts state that high frequency of APCR conferred a survival advantage over time in the case of post-partum hemorrhages, the decrease of the iron loss during the period or in the case of traumas that could be life-threatening (3).

Modern times expose the carriers of those genes at some risk factors unknown to the predecessors: the oral

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contraception, the surgeries, the extended immobilizations during the journeys, the sedentary life (4).

The asymptomatic patients having APCR need counseling and short-term prophylaxis of heparin in the case of immobilizations, surgery, traumas, and obstetrical procedures (5).

The symptomatic patients (heterozygotes, homozygotes) and those with other types of thrombophilia must get an anticoagulant therapy (5).

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