

C7 AIS-C TETRAPLEGIA AFTER CERVICO-TORACIC ACUTE EPIDURAL SPINAL HEMATOMA: CLINICAL AND PHYSIO-PATHOLOGICAL PARTICULARITIES - CASE PRESENTATION AND LITERATURE REVIEW

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Abstract

Introduction: Epidural hematoma has double anatomopathological topography: intracranial and/or spinal. Its etiology is complex: post-traumatic, iatrogenic (secondary to an inadequate anticoagulation and/or antiplatelet treatment), congenital or acquired disorders of coagulation (leukemia, hepatic cirrhosis, etc.), secondary to an intense Valsalva maneuvers (e.g. during labor) or idiopathic. The purpose of this article is to present a clinical case of acute spinal epidural hematoma (SEDH) with atypical clinical picture, and also a brief synthesis of the literature.

Case presentation: A 80-years-old male patient, with locomotor disability (bilateral congenital foot deformity – fig 1), with multiple cardiovascular comorbidities (chronic atrial fibrillation, dilated cardiomyopathy and chronic heart failure (class II NYHA, with a left ventricle ejection fraction of 40 %), chronically anticoagulated with a vitamin K antagonist (acenocumarol) suffered a low-energy C7 vertebral fracture followed by a SEDH at C3-Th2 vertebral levels. The elderly felt a dizziness, and had fallen (from body level) without cranial trauma, event followed by a short loss of consciousness (without convulsions or sphincter relaxation). Hemilaminectomy at the C4-Th2 levels was performed for decompression and evacuation of the SEDH. The patient was then transferred in our rehabilitation clinic with a C7 AIS-C tetraplegia, neurogenic bladder and bowel and wound dehiscence (healed per secundam). The rehabilitation program was individualized and adapted to the current clinical-biological status.

Discussion: The case particularity consists in the difficulty to accurately indicate the exact chronological chain of etiopathogenetic mechanisms generating the acute SEDH. The anticoagulant therapy might be incriminated as an iatrogenic cause for a "spontaneous" SEDH, but most probably its etiology is traumatic, consequence of the cervical spine fracture due the low-intensity biomechanic impact. The patient had accidentally fallen on his ischial tuberosities and then on his back, without cranial impact with the surrounding objects (e.g. furniture). Typically, this type of level fall causes fractures of the atlanto-axonal vertebral complex (C1-2), different from the current case (followed by C7 vertebral fracture).

The loss of consciousness for a short period of time could be owed to a cardiogenic syncope, a minor head trauma and/or a transient ischemic attack.

The complex predisposing circumstances to accidental fall in our elderly patient were due to the:

- unstable locomotor function, secondary to his congenital clubfoot deformity / disability
- chronic atrial fibrillation, hypodiastolic phenomena with global cerebral circulatory insufficiency (cardiogenic syncope) and/ or a transient ischaemic cerebral attack.

The **functional prognosis** is poor, because of to the severe cardiovascular pathology, which represents the major impediment due to the somatic (**body** functions and structure) impairments. This health-related condition had severe repercussions on the subject's **activity** (related to tasks and basic activities of daily living) and **participation**, affecting the outcome of rehabilitation, and his **quality of life**.

The **vital prognosis** depends on prevention of common health complications (such as urinary tract infections, bowel problems, and pressure sores), in the context of the severe cardiac and neurological comorbidities. The vitamin K antagonist was replaced with a novel anticoagulant (apixabanum), in order to provide secondary and tertiary prophylaxis of cardio-embolic stroke.

Keywords: *spinal epidural hematoma, elderly, falling from level, rehabilitation, prognosis*