

OPTIMAL SURGICAL TIMING IN SUBDURAL HEMORRHAGE AND CHRONIC SUBDURAL HEMATOMA

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Abstract: Subacute subdural hematoma is an extracerebral collection with the appearance of a clot or liquid, placed between the dura mater and the arachnoid that does not extend into the subarachnoid space and is diagnosed between 3-21 days from the date of initial trauma. The clinical picture depends on the location of hematoma and associated parenchymal lesions, symptoms being nonspecific, consisting of headache, vomiting, confusion, personality and speech disorders.

INTRODUCTION

Subacute subdural hematoma is a collection of blood localized subdurally that manifests clinically within typically more than 3 days after a minor traumatic brain injury or most often, "escaping" the primary moment, without paying too much attention from the part of the patient or entourage.

Most commonly, it occurs in people who have expanded subdural space (elderly, alcohol consumers), allowing the slow accumulation of blood, the source of bleeding being the cortico-dural veins. "Zero" moment is the rupture of the cortico-dural vein, as a result of a trauma, most often "neglected", these veins being under tension due to preexisting cortical atrophy; blood accumulates in the subdural space, the increase being produced by hyperosmosis and successive rupture of other cortico-dural veins, while causing blood collection hemolysis and the formation of a capsule.

Clinical picture has a fluctuating evolution:

- initial loss of consciousness is followed by a period of improvement, with the persistence of intracranial hypertension syndrome of variable intensity;
- after about 48-72 hours, intracranial hypertension syndrome increases in intensity with a rapid impairment of consciousness leading coma, along with the installation of focal signs;

Laboratory explorations used in clinical practice are CT scanning, the appearance between 4 days and 2-3 weeks from trauma being of an isodense collection, difficult to distinguish from the brain parenchyma, but with subjacent mass effect.

CASE REPORT

We present the case of a male patient, aged 64, who addresses the Emergency Room within the County Clinical Emergency Hospital of Sibiu for persistent headache, ear pain, chills, symptoms that began 3 days ago, after an effort of defecation. We mention that the patient was under anticoagulant treatment with Trombostop.

The patient was sent to the Infectious diseases unit, being suspected with meningoencephalitis, where he performed a CT scan, which showed acute subdural collection of 6 mm in thickness, in the right fronto-temporal region, delayed gyration,

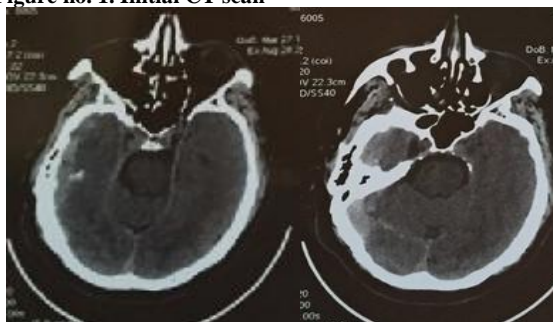
sign of a diffuse cerebral edema. Midline structures were normally.

The patient was transferred to the Neurosurgery ward and after neurosurgical consultation, the patient refused surgery but he remained hospitalized for 10 days, when he received depletive, neuro-robortant and symptomatic treatment, replacing Trombostop with Clexane.

In dynamics, a check-up CT scan was performed before discharge, which revealed no change in the size and appearance of hematoma (figure no. 1).

The patient was discharged with improved overall condition and with the recommendation to change the anticoagulant therapy.

Figure no. 1. Initial CT scan



One month after admission, the patient returned to the Neurosurgery ward for check-up.

Upon admission, the patient presented with headache widespread in the cephalic extremities, stronger at temporal and frontal level, which was increased when coughing.

Check-up CT scan revealed a residual accumulation in the right temporal subdural region, with the appearance of a chronic hematoma, with hematic debris, of a maximum thickness of 2.4 cm, with effacement of cortical sulci adjacent to the hematoma and of right lateral ventricle with delayed gyration (figure no. 2).

Surgery was performed with cardiologic monitoring, removing the chronic temporal HDR (figure no. 3). Postoperatively, the patient was monitored in the Intensive Care

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CLINICAL ASPECTS

Unit. The patient was discharged with the wound healed and the disappearance of neurological complaints, afebrile.

Figure no. 2. Preoperative check-up CT scan

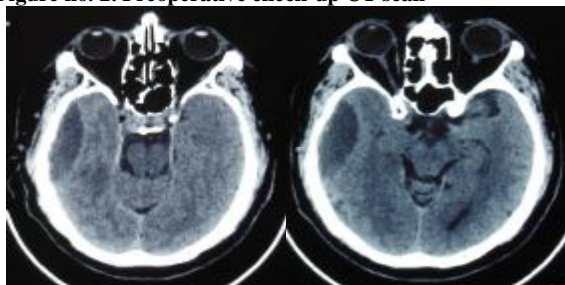
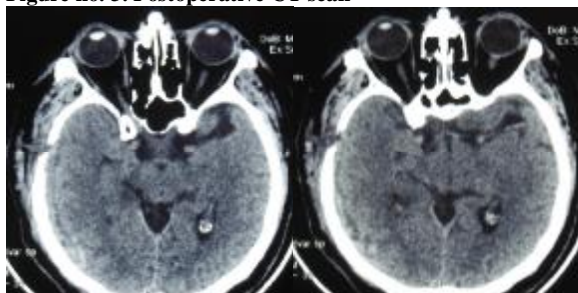


Figure no. 3. Postoperative CT scan



DISCUSSIONS

Formation of chronic subdural hematoma requires several weeks, even months. Cortico-dural veins rupture, rarely a cortical artery, represents the initial source of bleeding. Subdural collection becomes in time delimited by a fibrous capsule with brain tissue adhesions, bleeding when handling. Blood collection can spread over the entire surface of the cerebral hemispheres, the so-called subdural convexity hematoma or can be delimited to a cerebral territory. Initially, the blood collection consists of altered blood, and in advanced stages, the appearance becomes xanthochromic.

The clinical onset of chronic subdural hematoma is insidious, the patients complaining about headaches, gait or balance disorders, cognitive dysfunctions or memory loss, muscular weakness, confusion, aphasia.

The most common signs are hemiparesis and asymmetric reflexes in older patients. In contrast, in young patients, the headache syndrome is predominant.(1) Predisposing factors are: generalized cerebral atrophy that increases the venous fragility associated with aging. Highest chances of developing chronic subdural hematoma are in the elderly with associated pathology and treatment with anticoagulants, especially from minor traumas.(2,3) Sometimes, even after a minor trauma, symptoms such as dizziness and headache or cognitive problems may persist even for one year from trauma.(4,5)

A chronic subdural hematoma can mimic other disorders of the brain, leading to erroneous diagnosis interpretations, like dementia, stroke, transient ischemic attack, encephalitis, brain tumours. Neurological examination is essential, the monitored parameters being consciousness, eyes opening, language, photomotor reflex, paresis tests for hemiparesis / plegia.(6)

The size, the rate of increase of hematoma, associated comorbidities and the informed consent of the patient and the family are factors to be taken into account in determining the neurosurgical therapeutic indication. Sometimes, if the size is

small, it can resolve spontaneously (7), but most often, especially in the case of symptomatic subdural hematoma, neurosurgical intervention is needed.

The basic therapeutic conduct is surgery, consisting of evacuating the contents by minimum craniectomy, followed by external drainage.(8) Healing is achieved in 95% of cases, with the disappearance of intracranial hypertension syndrome or immediate focal signs.(9)

CONCLUSIONS

- Anticoagulant treatment is a major risk factor in the onset of chronic HDR, surgery being required in case of symptoms worsening or increased sizes.
- Computer tomography examination is the investigation of choice in neurological or neurosurgical pathology.
- Neurological monitoring is mandatory, regardless of treatment applied; any new or persistent sign imposes a check-up CT scan.
- Informed consent of the patient is required in adopting the surgical therapeutic attitude.
- Surgery is carried out in close correlation with the neurological status and imaging investigations appearance, worsening the neurological status leading to neurosurgical intervention
- Check-up CT scan is mandatory.

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