Case Report

An Unusual Presentation of Chronic Subdural Hematoma: Isolated Abducens Nerve Palsy

Adem TÜRK¹, Gürkan GAZİOĞLU², Mehmet KOLA¹, Haydar USUL², Hidayet ERDÖL¹

¹Karadeniz Technical University, Faculty of Medicine, Department of Ophthalmology, Trabzon, Türkiye ²Karadeniz Technical University, Faculty of Medicine, Department of Neurosurgery, Trabzon, Türkiye

Abstract

Intracranial hemorrhages are important clinical events necessitating early diagnosis and treatment as they might cause significant mortality and morbidity. Knowing clinical signs is important in early diagnosis. In this study we present an 18 year old male patient who had admitted to our clinic with a history of jumping into the sea that resulted in a head trauma nearly two months ago and who developed diplopia and headache two weeks ago. Following neurological, ophthalmological and radiological evaluations; the case was diagnosed as chronic subdural hematoma accompanied by unilateral isolated abducens nerve palsy. The patient was operated and this resulted in resolution of his symptoms. This case demonstrated us that isolated 6th cranial nerve palsy might develop as an initial symptom in chronic subdural hematomas.

Keywords: Abducens nerve diseases; Hematoma Subdural, Chronic; Strabismus; Intracranial Hemorrhage, Traumatic; Headache; Papilledema; Neurosurgical Procedures

INTRODUCTION

Chronic subdural hematoma (CSDH) is a relatively common clinical phenomenon among patients admitting to neurosurgery departments. Such cases are usually men while there is a history of head trauma in many of these cases. As initial symptoms the patients might present with headache, changes in the level of consciousness,
convulsions, nausea, vomiting, dementia, urinary incontinence, paresis or aphasia\textsuperscript{(3,6)}. With the early diagnosis of CSDH the response to treatment increases and the prognosis becomes favorable with simple surgical interventions\textsuperscript{(2)}. That is why different initial clinical presentations should be well mastered to make an early diagnosis possible.

In this case presentation we concentrate on a rare clinical presentation of CSDH which we did not previously come across in the English literature.

CASE PRESENTATION

18 year old male patient admitted to the neurosurgery outpatient clinic with the complaints of an aggravating headache that was present for the last two weeks and diplopia. Upon evaluation, the patient mentioned a head trauma that has occurred two months ago; while he was jumping into the sea he had hit the rocks with his head. The patient did not have any additional systemic illness, the ophthalmological examination revealed a limitation in the right outward gaze. Visual acuities of both eyes and computerized perimetry evaluations were within normal limits. In his fundoscopic examination the patient had bilateral papiledema (Figure 1). The patient did not have any additional neurological deficit. In T1 and T2 weighted cranial magnetic resonance imaging, there was a hyperintense appearance in right frontoparietoooccipital region correlating with hematoma which resulted in a shift effect on the midline. Cranial tomography identified an isodense lesion at the same region. With these results we arrived at the diagnosis of traumatic chronic subdural hematoma accompanied by right abducens nerve palsy (Figure 2).

Routine laboratory test results of the patient were normal and he was operated the following day under general anesthesia. First, frontoparietal craniotomy was performed. Subdural space was irrigated with physiological saline solution and after placing a closed system drainage to the subdural space, the bone flap was closed. The patient did not develop any problems in the early postoperative period and his drains were retrieved on the second postoperative day. The patient was followed up under antiepileptic therapy and was discharged after two weeks. The patient came for control visits and two months after his operation his limitation in outward gaze and papiledema was found to have disappeared. The patient was free of all his symptoms and the cranial tomography control obtained four months after the operation demonstrated that all cerebral parenchymal signs have improved as well (Figure 3).
Figure 2: Magnetic resonance (MR) and computerized tomography (CT) images of the patient obtained during first admission. In the MR examinations on T1 (A) and T2 (B) weighted axial sequences, hyperintense hematoma region could be identified. MR appearance of the same lesion on T1 weighted coronal section (C). In cranial CT examination with axial sequences, hemorrhage region could be observed as an isodense lesion (D).

Figure 3: Control cranial tomography of the patient obtained nearly four months after the operation. Subdural effusion and shift effect have completely disappeared.
DISCUSSION
CSDH is one of the most frequently encountered intracranial hemorrhages usually observed in elderly individuals; it presents itself with symptoms that develop within months following the head trauma\(^7\). The differences in the initial symptoms observed in the patients results in a wide clinical spectrum and being aware of such clinical features provides an important guidance in establishing the diagnosis.

Despite the fact that the process is still very complex; in the appearance of various initial neurological signs, the underlying pathophysiology is probably the disturbance in the cerebral blood flow\(^4\). A rare isolated sign for CSDH is 6th cranial nerve palsy which might develop due to increased intracranial pressure, traumatic damage or direct compressive effect of the hemorrhage\(^5\).

The development of the neurological signs observed in our patient was possibly due to the compression and the increase in the intracranial pressure resulting from CSDH. The disappearance of the symptoms following the evacuation of the hemorrhage with surgical approach supported this relationship.

There is ongoing research about the treatment approach in CSDH. It is important to decide whether the cases should be treated surgically or not. If CSDH is small in amount there might as well be spontaneous resolution\(^9\). However, if there is paresis or an increase in intracranial pressure, surgical intervention is recommended for such cases\(^3\). In patients with CSDH, simple surgical interventions that are not very invasive can result in significant symptomatic improvement\(^1\). The total resolution of the neurological symptoms and the signs in the case we present in the postoperative period supported this observation.

There are number of surgical options for the treatment of CSDH and research is still continuing for the most appropriate surgical intervention\(^8\).

Patients with CSDH might have new hemorrhages after surgery. In a study on this aspect, the recurrence rate after surgery was found to be 14.9%\(^10\). The case we present here was not identified to have any new intracranial hemorrhage during his follow up of six months.

As CSDH bring together significant risks of mortality and morbidity; clinical signs should be well mastered and arriving at early diagnosis with suspicion is crucial for the treatment of a disease that might at times remain silent. Isolated 6th cranial nerve palsy might be observed as a rare sign of this disease. In cases that present with 6th nerve palsy, a detailed neurological and radiological examination should be carried out to delineate the underlying cranial pathology. As we did not come across any similar publication in English literature, we believe that our case is the first in terms of its presentation.

Correspondence to:
Adem Türk
E-mail: doktorademturk@yahoo.com

Received by: 25 February 2008
Revised by: 25 November 2008
Accepted: 17 December 2008

The Online Journal of Neurological Sciences (Turkish) 1984-2010
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