

SPONTANEOUS RESOLUTION OF POST-TRAUMATIC CHRONIC SUBDURAL HEMATOMA: CASE REPORT

Marcel Marcikić¹, Boris Hrečkovski², Josip Samardžić², Mirjana Martinović³ and Krešimir Rotim⁴

¹Division of Neurosurgery, ²Department of Surgery, Dr Josip Benčević General Hospital, Slavonski Brod; ³Department of Neurology, Pakrac General County Hospital, Pakrac; ⁴University Department of Neurosurgery, Sestre milosrdnice University Hospital, Zagreb, Croatia

SUMMARY – Spontaneous resolution of post-traumatic chronic subdural hematoma is a very rare and unexpected event. It has been rarely reported in the literature, mostly cases of chronic subdural hematoma resolution in idiopathic thrombocytopenic purpura. Operative procedure is generally considered the treatment of choice for chronic subdural hematoma. We present a rare case, which did not require an open surgery, i.e. a case of post-traumatic chronic subdural hematoma spontaneous resolution in a 76-year-old female having sustained a fall without classic head injury. The possibility of conservative treatment is extremely rare in patients with chronic subdural hematoma, but it should be considered based on the patient's neurological and physical condition.

Key words: *Craniocerebral trauma – physiopathology; Hematoma, subdural – physiopathology; Remission, spontaneous; Case report*

Introduction

The term chronic subdural hematoma (CSDH) applies to those hematomas that present over 20 days after injury. The overwhelming majority of patients are elderly or in late middle age. Between 25% and 48% of patients have no history of head injury¹. Head injury of different intensity could produce brain contusion and laceration or rupture of bridging veins only, leading to subdural bleeding, clot formation, and later formation of membrane and chronic hematoma. The initial hemorrhage may be quite small and fail to compress the underlying brain. In some patients with coagulopathy, hemophilia or thrombopathy, the trauma may be insignificant or absent¹. Although there is general agreement regarding the sequence of membrane formation, there has been considerable controversy over

the pathogenesis of the subsequent enlargement of the hematoma¹. So, the mechanism of CSDH growth is not explained exactly. Computed tomography (CT) scan or magnetic resonance imaging (MRI) are diagnostic tools for evaluation of patients with suspected CSDH. Operative procedure is generally considered the treatment of choice (burr-hole trephination, craniotomy, twist-drill craniostomy), but decision is up to the neurosurgeon who is in charge. It is likely that some patients with CSDH remain asymptomatic and have spontaneous regression of their lesions. Forty-seven years ago, Gannon *et al.* and Ambrosetto reported on the resolution of CSDH and proposed that in selected patients, spontaneous (or medically assisted) resolution of CSDH might take place and that non-operative therapy might be preferable to surgical treatment^{2,3}. Patient observation is a kind of challenge for neurosurgeon to try with conservative treatment.

Case Report

Three months before admission, a 76-year-old female fell down because of high blood pressure crisis

Correspondence to: *Marcel Marcikić, MD, F.I.C.S.*, Division of Neurosurgery, Dr Josip Benčević General Hospital, Andrije Štampara 42, HR-35000 Slavonski Brod, Croatia
E-mail: marcel.marcikic@sb.t-com.hr

Received November 25, 2009, accepted August 11, 2010

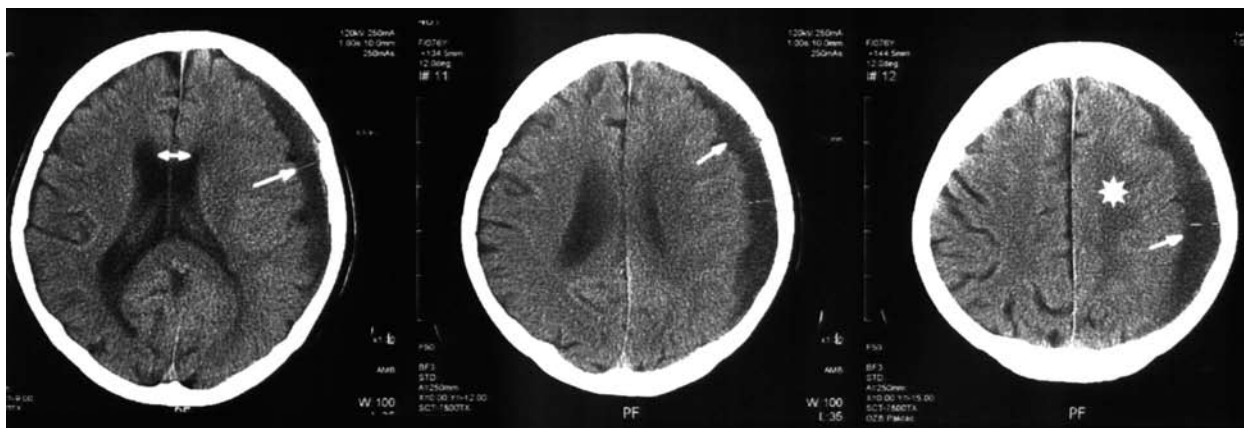


Fig. 1. Initial CT scan shows left-sided chronic subdural hematoma (white arrow) with slight shift on the opposite side (double-headed white arrow) and swollen left half of the brain (white star).

followed by dizziness. She did not strike her head directly, but in critical moment, her brain suffered sudden and vigorous moving in the skull, which caused rupture of the bridging veins. During the mentioned period, she complained of unstable gait and occasional mild headache, which was the reason she consulted her neurologist. Neurological examination disclosed discrete numbness of the right leg and exaggerated myotatic reflexes with atypical plantar response. She was unstable in Romberg test, tandem gait she could not perform. CT scan revealed left-sided frontoparietal

CSDH with mild shift and swollen upper part of the left brain lobe (Fig. 1). She was referred to neurosurgeon, who decided to treat her conservatively according to her neurological state: mild neurological numbness, self-mobile. She was healthy for her age. We followed her up. The next CT scan taken a month later revealed a 50% resolution of the hematoma, with lowering of lobe swelling and better presented subarachnoid space (Fig. 2). Her headaches disappeared and she felt neurologically better and more satisfied. We gave up operative treatment, definitely. Eighty days later, she came

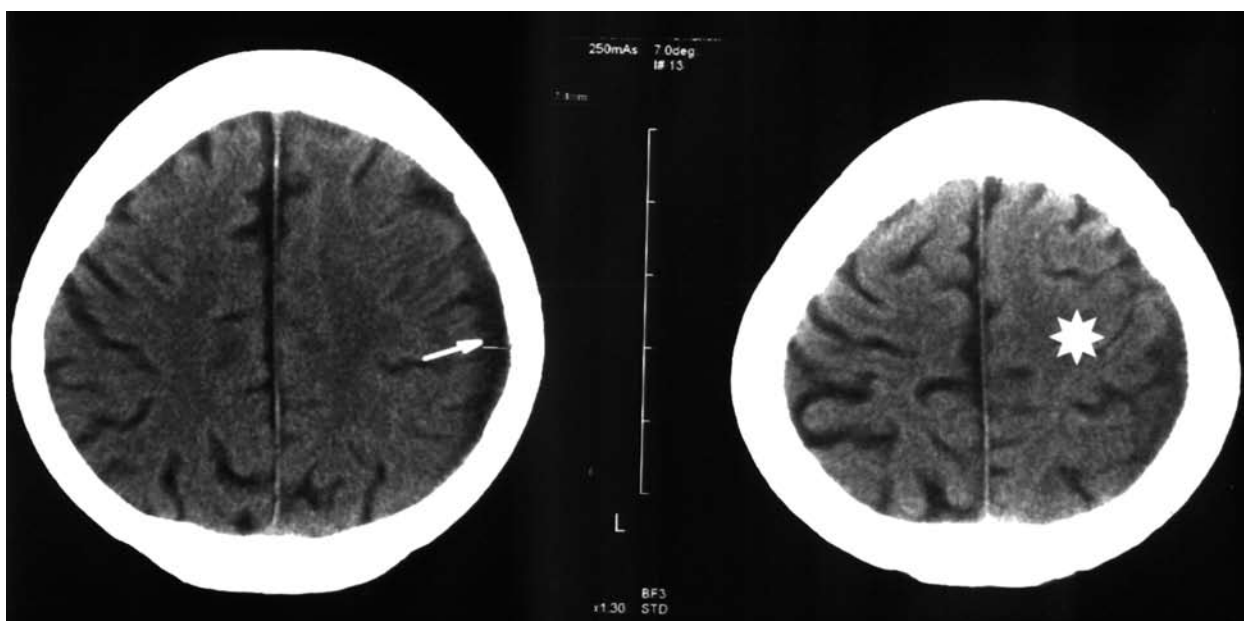


Fig. 2. First follow up CT scan shows 50% resolution of the left-sided chronic subdural hematoma (white arrow) with lowering of swollen lobe and better presented subarachnoid space (white star).

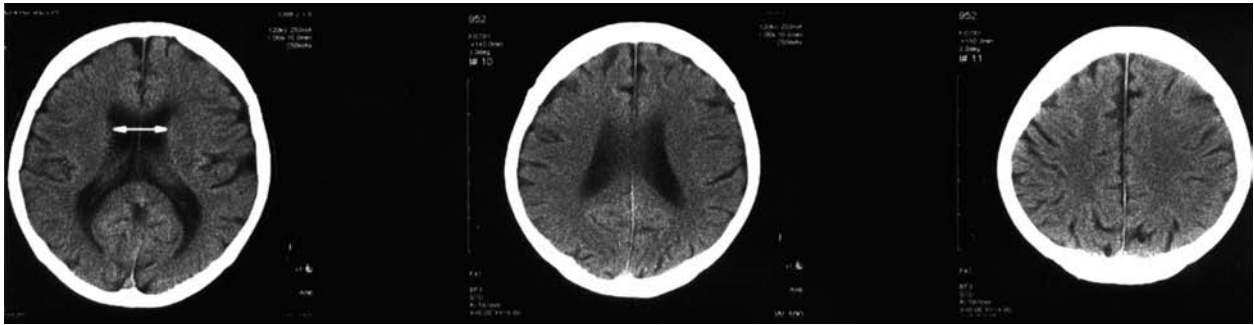


Fig. 3. Second follow up CT scan shows complete resolution of subdural collection with well visualized subarachnoid space and symmetric position of the brain lobes (double-headed white arrow).

for neurosurgical follow up with a new CT scan, which showed complete resolution of subdural collection, well visualized subarachnoid space and symmetric position of brain structures (Fig. 3). We finished the treatment with proposition for follow up examination in case of any neurological worsening. Nowadays, neurologically intact, she suffers headaches only in connection with climate and weather changes, and uses antihypertensive therapy regularly.

Discussion

Chronic subdural hematoma has been well-known since the 17th century⁴. Patients follow a course of a slowly expanding mass, with headache, nausea and vomiting, gait disturbances and progressive focal deficit. Others present with dementia or with acute neurologic deficits⁵. Chronic subdural hematoma occurs most frequently in the elderly. The most common predisposing factors are alcoholism, seizure disorders, cerebrospinal fluid shunts and anticoagulation. This could be associated with some degree of brain atrophy or collapse, frequent head trauma or impaired homeostasis⁶. Some CSDHs will resolve spontaneously, as suggested by the existence of calcified "hematomas"⁶. There are few reports in the literature of total spontaneous resolution of post-traumatic CSDH^{2,3,7,8}. Taking into account our patient's clinical/neurological state and age, we decided to postpone the operation, follow her up and wait. It resolved completely in three months and she felt good. In all other cases, we did not have an opportunity to wait or postpone the operation because those patients presented in poor condition with the mentioned symptoms (headache, nausea and vomiting, gait disturbances and progressive focal deficit).

We think that patient age and clinical state are the facts that everyone must take into account when choosing conservative treatment in patients with post-traumatic CSDH. The more depressed the patient's level of consciousness, the more likely is that the operation would be the primary treatment modality. The possibility of conservative treatment is extremely rare in these patients, but it could be considered according to the patient's neurologic and physical condition.

References

1. COOPER PR. Posttraumatic intracranial mass lesion. In: COOPER PR, ed. Head injury, 2nd edition. Baltimore: Williams and Wilkins, 1987:246-56.
2. GANNON WE, COOK AW, BROWDER EJ. Resolving subdural collections. *J Neurosurg* 1962;19:865-9.
3. AMBROSSETO C. Post-traumatic subdural hematoma. Further observations on non-surgical treatment. *Arch Neurol* 1962;6:287-92.
4. SAMBASIVAN M. An overview of chronic subdural hematoma: experience with 2300 cases. *Surg Neurol* 1997;47:418-22.
5. MISRA M, SALAZAR JL, BLOOM DM. Subdural-peritoneal shunt: treatment for bilateral chronic subdural hematoma. *Surg Neurol* 1996;46:378-83.
6. YOUNG JR. Pathology and pathophysiology of head injury. In: YOUNG JR, ed. Neurological surgery, Vol. III. Philadelphia, WB Saunders Co., 1990:1978-9, 2106-7.
7. PARLATO C, GUARRACINO A, MORACI A. Spontaneous resolution of chronic subdural hematoma. *Surg Neurol* 2000;35:312-7.
8. NAGANUMA H, FUKAMACHI A, KAWAKAMI M, MISUMI S, NAKAJIMA H, WAKAO T. Spontaneous resolution of chronic subdural hematomas. *Neurosurgery* 1986;19:794-8.

Sažetak

SPONTANO POVLAČENJE POSTTRAUMATSKOG KRONIČNOG SUBDURALNOG HEMATOMA:
PRIKAZ SLUČAJA

M. Marcikić, B. Hrečkovski, J. Samardžić, M. Martinović i K. Rotim

Spontano povlačenje kroničnog subduralnog hematoma je vrlo rijetko vidljivo i neočekivano u praksi. Rijetko se spominje u literaturi, najčešće slučajevi povlačenja hematoma u bolesnika koji boluju od idiopatske trombocitopenične purpure. Operacijsko liječenje je opće prihvaćeni način liječenja kroničnih subduralnih hematoma. U radu se prikazuje slučaj u kojem smo se odlučili za nekirurško liječenje: posttraumatski kronični subduralni hematoma izliječen konzervativno u 76-godišnje bolesnice koja je nastradala pri padu, bez klasične ozljede glave. Mogućnost konzervativnog liječenja je iznimno rijetka u bolesnika s kroničnim subduralnim hematomom, ali se o tome treba razmisliti shodno neurološkom stanju bolesnika i fizičkoj kondiciji.

Ključne riječi: Kraniocerebralna trauma – fiziopatologija; Hematom, subduralni – fiziopatologija; Remisija, spontana; Prikaz slučaja