CASE REPORT

Spontaneous Disappearance of a Large Chronic Subdural Hematoma: A Pleasant Surprise

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Abstract We report an extremely rare case of spontaneous complete disappearance of a large chronic subdural hematoma in a 78-year aged man with a significant mass effect and a large midline shift which was diagnosed around 6 weeks before admission. Repeat NCCT of the head in our department to everyone's surprise revealed almost complete spontaneous resolution. Spontaneous resolution of a large chronic subdural hematoma is extremely rare, and the scarce literature whatsoever is available is especially in cases of immune thrombocytopenic purpura where steroids may play a role in the stabilization of neomembranes. Our interest is in this case because of the benign clinical course despite a large size causing severe mass effect and large midline shift. Chronic subdural hematoma is a common entity in the elderly generally seen weeks following minor trauma. Surgical evacuation of a chronic subdural hematoma remains the gold standard treatment, but controversy exists regarding the best surgical option. Spontaneous resolution of a chronic subdural hematoma has also been reported rarely, but mainly in patients with immune thrombocytopenic purpura.

Case Report

A 78-year-old man was diagnosed as a case of diabetes mellitus with hypertension with left bundle branch block presented to the emergency room for treatment for an already diagnosed large right fronto-parietal-temporal chronic subdural hematoma. The patient had history of frequent falls and dementia when he first underwent computed tomography of the brain which revealed a large chronic subdural hematoma with a significant mass effect (compressed ipsilateral ventricular system with developing contralateral hydrocephalus) and a large midline shift (Fig. 1).

At that time, the patient's family was not willing for surgery and the family came to us after 6 weeks of initial scan for second opinion. On examination, the patient was fully conscious and had improved symptomatically during this period. Repeat NCCT of the head to our surprise revealed almost complete spontaneous resolution of a large chronic subdural hematoma, and the patient was discharged in satisfactory condition (Fig. 2). He was a reformed alcoholic and had no history of anticoagulation.

Keywords Chronic · Subdural · Spontaneous · Resolution

Discussion

Chronic subdural hematoma is an encapsulated collection of old blood between the dura mater and the arachnoid which is liquefied most of the time. It is more common in the elderly, but minor head trauma few weeks before presentation is a common antecedent. However, history of head injury may be absent in a significant number of patients. Anticoagulation, alcoholism, history of epilepsy and bleeding diathesis, low intracranial pressure secondary to

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Fig. 1 CT of the head reveals a large right-sided chronic subdural hematoma

dehydration or after the removal of cerebrospinal fluid, and history of renal dialysis (presumably due to platelet dysfunction) are the other factors that might predispose the patient to chronic subdural hematoma.

Various theories explain pathogenesis of chronic subdural hematoma. Tanaka et al. reported that the starting point is a subdural collection of CSF with blood cells which occurs due to tears in the arachnoid membrane following contusion of the brain or slight bleeding from a bridging vein. Next, with

Fig. 2 Repeat CT of the head revealed almost complete resolution of hematoma

formation of a primary neomembrane and gradual bleeding, there is an increase in size of unclotted hematoma with a thick outer membrane and a thin inner membrane, although some hematoma resolves spontaneously [1].

Patients may present with headache, nausea and vomiting, gait disturbances, progressive or acute neurological deficits, or dementia. Treatment is surgical evacuation of chronic subdural hematoma. There is a whole range of surgical procedures including twist-drill craniostomy, burr hole craniostomy±irrigation±closed system drainage, single burr hole versus double burr hole, subtemporal craniectomy, endoscopic procedures, and craniotomy and membranectomy but the decision is up to the neurosurgeon who is in charge. The aim of the surgery is decompression and removal of the fibrinolytic substances, but the ideal surgical treatment has not been clearly established so far.

Neurological recovery after surgery is usually excellent but a recurrence rate up to 25 % is reported in the literature. Also, complications like subdural empyema, tension pneumocephalus, brain contusion, subdural or epidural hematoma, intracerebral hemorrhage, catheter penetration to the brain, and even death may occur after surgery.

Due to good surgical results, literature on conservative management and spontaneous resolution of chronic subdural hematoma is scanty indeed. Conservative management with dexamethasone in well-selected, good-grade cases has been reported in the management of chronic subdural hematoma [2].

Kageyama et al. in a study proposed that tranexamic acid can be safely used as a primary medical therapy, without surgical intervention, to prevent the progression of chronic subdural hematoma. Tranexamic acid inactivates plasminogen and, therefore, might inhibit the hyperfibrinolytic activity and the increased vascular permeability, which would consequently allow the hematoma to be gradually absorbed without expansion [3]. Wang et al. in a preliminary prospective report demonstrated that atorvastatin can be a safe, effective treatment for chronic subdural hematoma compared to a surgical intervention although results need to be further validated in a larger, randomized, and placebo-controlled trial [4].

Spontaneous resolution of chronic subdural hematoma has also been reported rarely that, too, in patients with immune thrombocytopenic purpura where steroids not only help in increasing platelet count but also stabilizes the neomembranes. A case report by Patnaik et al. also showed that a trial of conservative management can be suggested in a case of chronic subdural hematoma associated with idiopathic thrombocytopenic purpura as there is a chance of spontaneous resolution with elevation of platelet count which also prevents possible disastrous intraoperative bleeding and postoperative re-bleeding [5].

Spontaneous resolution of a large chronic subdural hematoma is extremely rare. Parlato et al. in a study advocated that conservative treatment can be tried in patients aged greater than 70 years, with decreased cognitive level, brain atrophy,

and absence of raised intracranial pressure [6]. Our interest is in this case because of the benign clinical course despite a large size causing severe mass effect and large midline shift. Previous case reports which have shown spontaneous resolution either had no significant mass effect or were localized to the frontal region [7].

Yang et al. in a case report claim to report the first case of spontaneous resolution of a non-traumatic chronic subdural hematoma where a 70-year-old lady on anti-aggregation therapy developed a bilateral chronic subdural hematoma which resolved completely spontaneously. The study also concluded that dimerized plasmin fragment D in venous blood may be more sensitive in the judgment of types of chronic subdural hematoma [8].

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