

Brief Report of Special Case

Choreathetoid movement as an unusual presentation of subdural haematoma

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Summary

Subdural haematomas can present with a wide variety of symptoms. An atypical presentation can be movement disorders. The key feature is that the history of onset is more rapid than with neurological conditions such as Parkinson's disease. The symptoms can also be an acute worsening of pre-existing disorder. The case discussed involved an 80 year old woman with bilateral choreathetoid movements attributed to a unilateral chronic subdural haematoma. The haematoma was surgically drained and the symptoms resolved. Sporadic reports of similar cases of movement disorders associated with subdural haematomas exist in the literature, but rarely do unilateral haematomas present with bilateral symptoms. Pressure effects, neurotransmitter abnormality and ischaemia have been postulated as reasons for this type of presentation. Unexplained and sudden movement disorders might warrant imaging to rule out a subdural haematoma as the cause.

Keywords: Choreoathetosis; subdural haematoma; movement disorder.

Case

An 80 year old woman presented with choreathetoid movements and intermittent confusion. The movements were bilateral, and more severe in the upper than lower

extremities. Computed tomography (CT) imaging of the head demonstrated a large isodense subdural haematoma (Fig. 1), covering the whole of the left hemisphere, with compression of the lateral ventricle and midline shift. The haematoma was evacuated under general anaesthetic using two burrholes. The movement disorder completely resolved within 48 h of surgery, although the confusion took several days to improve. She was discharged back to her home environment with some support.

Discussion

The earliest reported case of a subdural haematoma producing a movement disorder is the only other case in the literature of a unilateral haematoma causing bilateral symptoms. A 12 year old boy with acute lymphocytic leukaemia developed a left sided chronic subdural haematoma (CSDH) and generalised chorea [2]. Upon evacuation the symptoms resolved.

In the few other documented cases of chorea/choreathetoid disorders associated with subdural haematomas, unilateral lesions were associated with unilateral symptoms, whereas bilateral symptoms were typically seen only in the presence of bilateral haematomas. In 1980, Bae *et al.* reported two cases of bilateral CSDH causing generalised chorea [1]. The first was a 57 year old lady who had been previously well and suddenly developed headache, dizziness and gait disturbance. During admission she developed symmetrical choreiform movement that resolved completely on evacuation of bilateral CSDH. The other patient, who had a family history of

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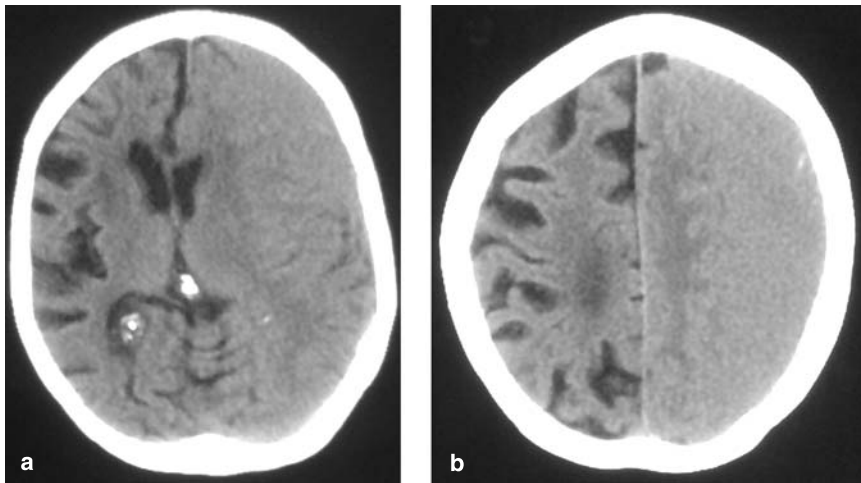


Fig. 1. CT showing large, isodense subdural collection over the left hemisphere producing significant mass effect with midline shift

Huntington's disease, was admitted with headache, ataxia and confusion. The choreiform movements became more prominent during the hospital stay and there was a marked improvement in symptomatology following drainage of bilateral subdural collections. In 1981 a 73 year old man presented with confusion and generalised chorea following recurrent falls during amputation rehabilitation [5]. The symptoms were attributed to bilateral CSDH seen on imaging and there was complete resolution on evacuation. In 2004 a 76 year old women was also seen to develop choreiform movements that were ascribed to bilateral CSDH [8]. She had been diagnosed with normal pressure hydrocephalus two years previously and had undergone insertion of a ventriculo-peritoneal shunt; the haematomas were felt to have developed secondary to overdrainage from the shunt. The right-sided haematoma was larger than the left, and she underwent unilateral drainage which led to complete symptom resolution.

CSDH have also been seen in relation to other movement disorders, reportedly causing parkinsonian symptoms, either *de novo* or as an acute exacerbation of existing disease. There are two cases of parkinsonian symptoms directly attributed to CSDH in the literature. Both were initially thought to be Parkinson's disease and treated with L-dopa, without success. One patient had a background history of mild Alzheimers disease and presented shortly after a minor road traffic accident with shuffling gait and rigidity in the lower limbs [7]. A unilateral CSDH was evacuated, leading to recovery from the symptoms. The second patient was found to have bilateral CSDH after being investigated for headaches, confusion, tremor and gait disturbance [6]. Again, drainage caused improvement in the clinical state.

Minor head trauma in two cases of known Parkinson patients provoked a deterioration in their previously stable disease state. CT imaging demonstrated CSDH (unilateral in one, bilateral in the other). One patient made a rapid recovery to their former level [3] whereas the other improved but at a much slower rate [4].

The presentation of a subdural haematoma as a movement disorder is only found in the literature in case reports. Clearly, any proposed theory of pathogenesis must explain the production of bilateral symptoms by a unilateral lesion. One theory postulated is that pressure effects cause transtentorial displacement of the brain leading to damage to thalamic structures [1, 8]. Direct pressure on basal ganglia structures themselves [6, 7] or altered neurotransmitter function have also been suggested [7]. Another possibility is that the mass of the haematoma produces ischaemia in the subthalamic nuclei [1, 5, 6]. There could also be a lesion in the frontopontine pathways [6].

Movement disorders are a rare presentation of chronic subdural haematoma. However, the sudden onset of such symptoms may warrant CT scanning to rule out this potentially reversible cause. The diagnosis of CSDH should also be considered in an acute exacerbation of a previously stable chronic condition.

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Comment

The authors report the case of an 80 year-old female patient who presented with bilateral choreathetoid movements caused by a unilateral chronic subdural haematoma. These symptoms resolved after evacuation of the haematoma. Although rare, this is a known possibility, particularly when the development of the movement disorder is abrupt. As stated by the authors, the exact pathophysiologic mechanisms remain hypothetical.

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