



Case Report

A unique case of nontraumatic femoral neck fracture following epilepsy partialis continua☆



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ABSTRACT

People with epilepsy are more accident prone than the non-epilepsy population. Bone fractures are most often due to seizure-related falls. However, seizures themselves, in particular generalized tonic-clonic seizures, may also cause fractures, e.g. of the thoracic spine. Here, I present a man who developed focal epilepsy following a subarachnoidal hemorrhage. During a focal motor seizure with left-sided convulsions and preserved consciousness that lasted 2 hrs, he sustained a femoral neck fracture. In persons with low mineral density, as in this case, contractions associated with simple focal motor seizures may be sufficient to give rise to such a severe complication.

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1. Introduction

People with epilepsy are more prone to injuries than the general population [1]. This is particularly true for subgroups of patients with symptomatic epilepsy, frequent generalized tonic-clonic or atonic seizures, and comorbid conditions. Fortunately, the injuries are most often trivial, with abrasions, contusions, and wounds being the most frequent.

However, more severe injuries may also occur, like burns, head or dental injuries, and fractures.

Studies have shown an increased risk of fractures among people with epilepsy, but the extent of the increase is debatable. Most fractures are caused by falls, but nontraumatic fractures caused by the seizures themselves have also been reported [2].

Although seizure-related compression fractures of the vertebral corpora in the thoracic spine are fairly well known, these complications are easily overlooked as some may be subclinical. Generalized tonic-clonic seizures comprise are the seizure type that is most often associated with such fractures, and the seizures may not always be due to epilepsy.

Here, I present a patient with symptomatic focal epilepsy who sustained a femoral neck fracture following a long-lasting focal motor seizure.

2. Case history

The patient is a 47-year-old man living in a nursing home for people with epilepsy and disabling comorbidities of neurological, cognitive, and/or psychiatric nature. He has a long history of drug abuse; for many years, he was addicted to amphetamine. At the age of 37, he had a subarachnoidal hemorrhage (SAH) which caused a left-sided hemiparesis and mild cognitive deficiency. Eventually, he was able to walk with some assistance, but he spends most of his time in a wheelchair.

In the first two years following the SAH, he had two epileptic seizures. The first was a short-lasting focal motor seizure with left-sided convulsions and preserved consciousness. The other was a secondarily generalized tonic-clonic seizure starting with left-sided jerks. Following the last seizure, he was given lamotrigine, and on this medication, he was seizure-free for seven years.

In February 2013, while sitting in a wheelchair and possibly precipitated by an upper respiratory infection, he had a focal motor seizure with left-sided convulsions. During the seizure, he was fully awake. Even though 25-mg (10 + 15-mg) diazepam was given rectally, the seizure lasted more than 2 h. Thus, he was transported to the local hospital. Here, the seizure activity stopped spontaneously.

On the following days, he complained of pain in the left hip area, and on the third postictal day, an X-ray of the hip disclosed a medial fracture

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Fig. 1. X-ray of the patient's left hip showing femoral neck fracture.

of the left femoral neck (Fig. 1). He underwent surgical insertion of a hemiprosthesis on the same day.

Three months after this event, he had an assessment of bone mineral density in the right femur and lumbar spine (DXA). The values were 2.0 and 1.7 SD below mean, respectively (T-score: -2.3 and -2.0).

3. Discussion

This case illustrates that forceful contractions sufficient to cause fractures may not only be associated with generalized tonic–clonic seizures. This case illustrates that focal motor convulsions may give rise to such severe seizure-related complications. Predisposing factors in this case were the long duration of the convulsions, i.e., the seizure developed into *epilepsia partialis continua*, and his low bone mineral density. Whether his sitting position (he was sitting in a wheelchair during the first half hour of the seizure before he was lifted into a bed) may have also played a role is uncertain.

If and to what extent antiepileptic drugs are responsible for the decreased bone mineral density and increased fracture rate seen in people with epilepsy have been a matter of much debate for the last few years [3]. While the enzyme-inducing drugs are assumed to exert a negative effect on bone health, drugs like lamotrigine, which was used in this case, are assumed to be more “bone-friendly” [4].

However, bone strength is influenced by several factors other than drugs, e.g., inheritance, smoking and exercise habits, BMI, nutrition, sun exposure, and some diseases. In this case, physical inactivity and

heavy smoking is assumed to have contributed to the low bone mineral density and thus an increased susceptibility to fractures.

In all patients who, in the postictal phase of an epileptic seizure, focal or generalized, present with severe pain in the hip area and inability to walk, a fracture of the femoral neck should be suspected. To avoid avascular necrosis of the femoral head, an early surgical intervention with a fixation is needed.

Conflict of interest statement

The author declare no conflict of interest.

Appendix A Supplementary data

Supplementary data to this article can be found online at <http://dx.doi.org/10.1016/j.ebcr.2015.05.003>.

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