

Unprecedented atraumatic bilateral humeral shaft fracture after cesarean section due to epileptic seizure per se

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Objective

We present the case of a 32-year-old puerperal patient with bilateral humeral shaft fractures. She had history of epilepsy but no epileptic seizure and no medical treatment for epilepsy for 10 years. Following her epileptic convulsive attack on the day of cesarean section, bilateral humeral shaft fractures were not diagnosed until the 5th day.

Methods

Case report.

Results

A 32 year-old woman, gavida 1, parity 0, abortus 0, admitted to our emergency with a labor pain. According to the patient's last menstrual period, 39 weeks and 5 days of gestation with a diagnosis of early rupture of membranes has been made in the delivery room. Gestational period was also confirmed the embryo transfer dating as it was an IVF pregnancy. 2 cm cervical dilatation, 40% cervical effacement and active amniotic fluid efflux were reported according to the pelvic examination performed. Ultrasonography performed in the delivery room showed that its biometry is compatible with 37 weeks 4 day gestation, with normal amniotic fluid index and an estimated fetal weight of 3325 grams. No pathological feature has been drawn attention regarding her regular follow-up according to the patient's history and she has no history of internal diseases including osteoporosis. Her pregnancy was terminated with cesarean section and a healthy girl weighing 3160 grams was delivered. During the immediate post-operative care, generalized tonic-clonic seizure lasting about 50 seconds occurred. At this stage, the patient was controlled with proper intervention in order to prevent her from harming herself, the patient's airway has been kept opened with the appropriate treatment. On the day of the event, she was interrupted by mild bilateral shoulder pain and general muscle pain, which she reportedly experienced never before. She experienced difficulty moving her arms and suffered from generalized muscle pain, especially localized around both shoulders especially when breastfeeding her infant. The seizure was followed by a postictal state that resolved spontaneously after 50 seconds, and was reported to have lasted for approximately 1 minute. The patient was in the in the post-operative care unit during the entire seizure, and no fall from the bed or experience of any trauma has been observed. Following the seizure, the shoulder aches was reported by the patient. The patient was examined by the neurologist, internal medicine specialist, otorhinolaryngologist, Ob/Gyn specialist, pulmonologist and maternal-fetal medicine specialist. No examination report about fracture doubt has been reported by any of them. Analgesics and muscle relaxants to ease the pain have been employed. She was administered intravenous magnesium sulphate immediately as eclampsia diagnosis has not been excluded certainly. She was normotensive and had no subjective symptoms regarding the preeclampsia. Upon the neurology's recommendation, cranial tomography showed no sign of hemorrhage or pathology. She was discharged from the hospital upon her request as she stated that she has no complain about the shoulder pain. As the physical immobility and pain (the patient could not hold up her infant up) continued for two days, she was taken to the nearest emergency after the discharge on the 5th post-operative day. Bilateral shoulder plain roentgenograms were taken for the upper extremity pain. As emergent osseous pathology was suspected via X-rays, immobilisation, bed rest, analgesics were prescribed and MRI was planned. After physical examination, the doctor evaluated her shoulder anterior-posterior (AP) roentgenogram, which led to the diagnosis of bilateral humeral shaft fractures 5 days after the generalized tonic-clonic seizure. In her physical examination, both shoulders showed limitation of movement in hyperabduction, she was unable to move her arms up because of pain, and shoulder range of movements could not be examined. No neurovascular deficiency could be determined in the upper extremities. Laboratory findings revealed the following: hemoglobin concentration 10.8 g/dl (normal: 12-18 g/dl), urea level 8 mg/dl (normal: 7-20 mg/dl), creatinine level 0.62 mg/dl (normal: 0.57-1.11 mg/dl), total protein level 5.4 g/dl (normal: 6.4-8.3 g/dl), albumin level 3.0 g/dl (normal: 3.5-5.0 g/dl), lactate dehydrogenase activity 420 U/L (normal: 125-220 U/L), alkaline phosphatase activity 24 U/L (normal: 0-55 U/L), creatinine kinase activity 108 U/L (normal: 38-204 U/L), serum calcium level 8.6 mg/dl (normal: 8.4-10.2 mg/dl). In shoulder magnetic resonance imaging (MRI), glenohumeral dislocation with bilateral displaced multiple proximal humerus fracture was reported. Under general anesthesia, on the 20th day of the epileptic seizure, she was operated bilaterally in one session regarding the proximal humerus fracture. First, for the right shoulder, hemiarthroplasty with cementation and tenotomy of the right biceps was applied. Then, the exact hemiarthroplasty procedure was repeated for the left shoulder with the tenodesis of the left biceps. After re-consultation to the neurology department, her epilepsy treatment was re-organized. No other problem occurred after the discharge of the patient.

Conclusion

Although humerus fractures are frequently seen in the adulthood period, traumatic bilateral humeral fractures per se are very scarce. Fractures and dislocations of major joints are usually caused by severe external trauma or such cases may occur secondary to several metabolic disorders. Seizures may cause significant muscular tension and burst of energy capable of fracturing bones. Sudden forceful tonic muscular contractions of seizure activity are a lesser known cause of fractures and dislocations. Seizures caused by a wide variety of other disorders have been reported to cause skeletal lesions, predominantly fractures in the regions of the shoulder.

