

Case Reports

Depression and pregnancy-associated death by suicide after spinal cord injury: a case report

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Summary

Purpose of investigation: To report a case of a pregnant woman with traumatic spinal cord injury complicated with a psychiatric disorder. **Case Report:** A 24-year-old woman at 18 weeks of gestation was transferred to our hospital with a history of having jumped from a third-floor apartment patio. **Result:** A trauma survey showed no life-threatening hemorrhage, and fetal wellbeing was confirmed. Neurological examination showed complete loss of motor and sensory function in her lower extremities. Termination of pregnancy was advised and was achieved medically. Surgical intervention was performed to achieve stabilization of the spine and decompression of neural elements. After the operation, she was referred to a psychiatrist, and the administration of paroxetine, etizolam and flunitrazepam was begun. Four months after undergoing the abortion, she choked herself to death on her ward bed. **Conclusion:** Although it is rare, we should pay special attention to the substantial suicide risk of women who face severe spinal cord injury.

Key words: Pregnancy-associated death; Suicide; Psychiatric disorder; Spinal cord injury.

Introduction

The findings of both the “Confidential Enquiries into Maternal Deaths 2000 to 2002: “Why Mothers Die” and the Office of National Statistics linkage study suggest that psychiatric disorder, and suicide in particular, is the leading cause of maternal death [1]. Perinatal psychiatric disorder can be seen to complicate 15% of maternities both during pregnancy and in the postpartum period [2]. A minority of these illnesses are very severe risk factors, with relapsing psychosis or untreated pre-existing psychosis in particular constituting a medical emergency. In addition, depressive disorders are the most common form of psychological distress after spinal cord injury (SCI), and SCI-induced suicide is the leading cause of death in SCI patients younger than 55 years [3]. Therefore, physicians should be aware of a case of a suicide attempt by a young pregnant woman that resulted in traumatic SCI. We report here the case of a pregnant woman with traumatic SCI complicated by an untreated psychiatric disorder.

Case Report

A 24-year-old woman, para 4, gravida 1 at 18 weeks / 6 days of gestation, was transferred to our hospital with a history of having jumped from her third-floor apartment patio, following which she developed severe back and pelvic pain. On admission, she was on a backboard with her spine immobilized under the administration of high flow oxygen (12 l/min) through an oxygen mask with a reservoir bag.

In the emergency room, she appeared diaphoretic and rest-

less. Her vital signs were blood pressure 98/60 mmHg, pulse 86 beats/min, respiratory rate 24 breaths/min, body temperature 35.1°C and SpO₂ (pulse oximetry) 100% (O₂ 12 l/min, reservoir bag). The management of such a case was performed to prioritize assessment and stabilization following the ABCDE plus F (fetal assessment) scheme based on the Japan Advanced Trauma Evaluation and Care (JATEC) protocol.

On primary survey, her consciousness level was E3V4M6 (Glasgow Coma Scale). Plain x-rays (chest and pelvic) and ultrasonography (transthoracic and transabdominal) revealed no hemorrhage in the intrathoracic, intraabdominal, retroperitoneal and intrauterine spaces. Fetal wellbeing and viability were confirmed. She had no symptoms such as contractions, vaginal bleeding, or abdominal pain on initial presentation. Her anal sphincter reflex was unclear. On secondary survey, neurological examination showed complete loss of motor and sensory function in her lower extremity. Helical computed tomographic scanning with multiplanar reconstruction (MRP) and 3-dimensional (3D) rendering showed Th12 and L3 burst fractures and spinal cord compression at the level of Th12 (Figures 1 and 2). The lab tests showed that her maternal platelet counts and fibrinogen were within normal limits, and her blood type was O, Rh (D)-positive. A urine toxicology screen was negative. Sixty minutes after arrival, the administration of methylprednisolone was begun (30 mg/kg intravenous, followed by 5.4 mg/kg per hour over 23 more hours), and she was admitted to the intensive care unit for continued monitoring. Subsequently her sensory function slightly improved and provided a final diagnosis of Frankel Scale B SCI.

Her past medical history was significant and included several years of untreated depression and suicide attempts (overdose, wrist slashing, and inhaling gas). Four years previously she had married and had a viable first pregnancy. However, when admitted to our hospital, she was divorced and had lost contact with her family. At that time she was a commercial sex worker, and her partner was a minor. On the morning of the day she was transferred to our emergency department, she had visited an

Revised manuscript accepted for publication March 1, 2012

Fig. 1



Fig. 2

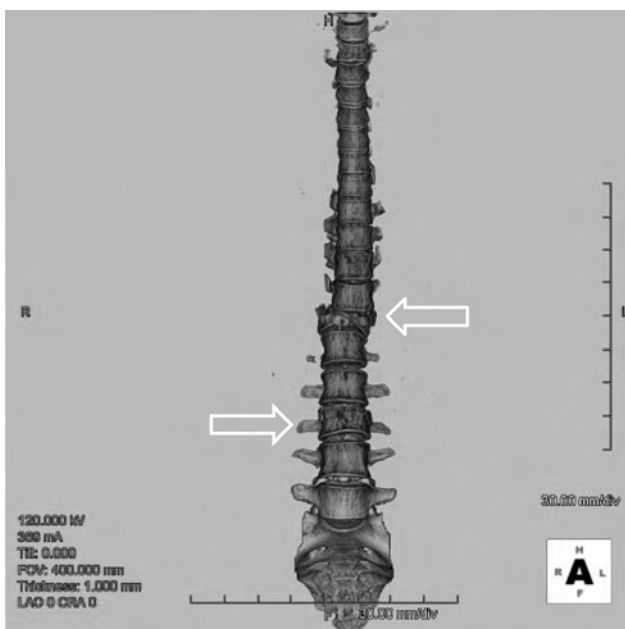


Figure 1. — Helical computed tomographic scanning with MRP showing a fetus in utero. Th12 fracture is suspected (*open arrow*).
 Figure 2. — Helical computed tomographic scanning with 3D-rendering showing burst fractures on Th12 and L3 (*open arrow*).

obstetric hospital complaining of abdominal pain. At that time, her pregnancy (18 weeks and 6 days of gestation) was first proved despite the use of contraception. After a series of consultations among physicians (obstetrician, orthopedist, psychiatrist, anesthesiologist and social worker) and her family (we made immediate contact with her family after written informed consent was obtained), we concluded that the pregnancy was a contributing factor to the parasuicide attempt and a risk factor for possible suicide, in addition to the fact that an untreated psychiatric illness was present. Termination of the pregnancy was advised and was achieved medically with gemeprost (20 weeks and 3 days of gestation). On the 9th postpartum day, surgical intervention was performed to achieve stabilization of the spine, reduction of dislocations and decompression of neural elements. After the operation, she was referred to a psychiatrist for further management and the administration of paroxetine (20 mg/day), etizolam (3 mg/day) and flunitrazepam (4 mg/day) was begun. Concurrently she was admitted to the Recovery and Rehabilitation Service. However, four months after the induced abortion, she was discovered in cardiopulmonary arrest on her ward bed. The resuscitation effort performed in accordance with the Advanced Cardiac Life Support protocol was not successful. She choked herself to death using a tight tie around her neck.

Discussion

In 1986, the Centers for Disease Control and Prevention (CDC, US) and the American Congress of Obstetricians and Gynecologists (ACOG, US) defined 'pregnancy-associated death' as the death of a woman from any cause while she is pregnant or within one year of the termination of pregnancy. We here discuss the case of this unpreventable pregnancy-associated death in terms of three aspects.

First, we quickly provided optimal care to the pregnant trauma patient with good communication among a multi-disciplinary group of physicians. As a result, primary treatment was begun within 60 minutes of her arrival. In obstetric emergencies and trauma, the mother's life is always our top priority. Trauma care priorities do not change when the patient is pregnant [4]. Any treatment required to save the mother's life or treat her critical status should be undertaken, regardless of her pregnancy, including any diagnostic imaging deemed necessary [5].

Second, we recommended the termination of her pregnancy, and the pregnancy was aborted. We believe that there are three prerequisites for continuing the pregnancy in cases of pregnancy complicated with psychiatric disorder: (1) a stable medical condition and regular evaluation by a psychiatrist and obstetrician; (2) close collaboration between the psychiatrist and obstetrical care provider; and (3) involvement of the family and other support networks in preparation for the occasion that the woman will not be able to adequately care for herself or her baby. None of them was present in this case. Soon after the onset of spinal cord injury, her relationship with her partner broke down. It was obvious that due to her poor social background and dysfunctional family her baby's welfare would not be protected.

Finally, we could not prevent her from committing suicide. Mortality after traumatic SCI, especially in women, has increased despite modern treatment and care. Special attention should be paid to the prevention of suicide and accidental poisoning [6], as these patients are at high risk for suicide and should be monitored closely. As for this case, in addition to paraplegia after traumatic SCI, other potential substantial risks of suicide such as untreat-

ed psychiatric disorder, previous suicide attempts, and induced abortion were present in this patient. The occurrence of a previous suicide attempt has been shown to increase the risk of suicide to 38 times the risk in the general population [7], although increased risk of suicide ideation and later suicide attempts have not yet been assessed for pregnant and postpartum women specifically. Also, much higher rates of both homicide and suicide were found in women who obtained an abortion compared to those who carried their pregnancy to term [8].

In conclusion, we should pay special attention to the substantial suicide risk of women who face severe SCI. The present case has important clinical implications and may provide guidance for physicians in the management of patients who suffer SCI resulting from a suicide attempt in the perinatal period.

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