Caring for reproductive-aged women with spinal cord injuries: a case report

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Summary: In 2008 there were an estimated 259,000 people living in the USA with spinal cord injuries (SCI). The majority of these people are in their reproductive years, and over 19% are estimated to be women. Advances in medical management have allowed many women to live successfully with congenital defects or injuries resulting in SCI that even a few years ago would have been fatal. Although many of these women may be classified as 'disabled', fertility is not usually affected in SCI and many of these women desire children of their own. It is important to counsel these women regarding the range of issues related to pregnancy. These include conception issues, parenting with a disability, emotional concerns of the family, nutrition and exercise in pregnancy, risks in pregnancy, labour and delivery, postpartum care, and breastfeeding. For health-care providers it is important to know and understand your patient's disability and be able to provide the best patient-centred quality care, understanding that each patient's circumstance may be unlike any other patient.

Keywords: spinal cord injury, pregnancy complications, SCI, quadriplegic pregnancy, autonomic dysfunction, reproductive health

CASE REPORT

A 35-year-old G1P0 woman with a history of C6 quadriplegia (ASIA Grade C) after a shallow water diving accident 12 years earlier presented with the desire to conceive. The patient had a past medical history of autonomic hyperreflexia precipitated by urinary tract infections, suprapubic catheter, recurrent yeast infections, a pilonidal cyst, pressure sores and previous pulmonary embolus. The range of issues canvassed above were discussed prior to conception. In addition to routine prepregnancy labs, baseline renal profile labs were obtained. After confirming pregnancy by ultrasound at six weeks amenorrhoea, the patient was started on enoxaparin and aspirin in order to prevent deep vein thrombosis and pulmonary embolus. At 37 weeks gestation, she was presented to labour and delivery for induction of labour with the plan to use early labour epidural anaesthesia to prevent autonomic hyperreflexia. After an uneventful labour, she delivered a male infant via a vacuum-assisted vaginal delivery. His birth weight was 2.64 kg and he was assigned APGAR scores of 8 at one minute, and 9 at five minutes. Postpartum care was uneventful.

DISCUSSION

Most women with SCI retain fertility¹ and are able to conceive and bear children.² In the case described the patient started care before the pregnancy and was counselled about complications and risks for both mother and child. For women with SCI, chronic medical conditions and organ function (especially

pulmonary and renal function) should be assessed for baseline values. The patient's medication list should be evaluated for drugs that could affect pregnancy. Notably, patients with SCI are often on pain medications, prophylactic antibiotics, glucocorticoids, benzodiazepines, anticoagulants or antispasmodic medications.² Medications may have to be adjusted or limited after careful assessment of their risks and benefits in pregnancy.

In pregnancy, women with SCI have increased risks for urinary tract infections, decubital ulcers, impaired pulmonary function, preterm labour, anaemia, deep vein thrombosis, pulmonary embolism, pre-eclampsia/eclampsia, autonomic hyperreflexia and unattended delivery. These patients require more frequent monitoring and prenatal visits.^{3,4} Home uterine monitoring or early admittance to the hospital can help to reduce prenatal visits, complications and unattended delivery, especially if the patient is unable to feel contractions or pelvic pressure. In this case, our patient was scheduled for induction of labour at 37 weeks with use of epidural anaesthesia in early labour in order to help prevent autonomic hyperreflexia precipitated by the pain of labour. Prophylactic anticoagulation should be considered in women with SCI especially if the patient has a history of hypercoagulable state, deep vein thrombosis, pulmonary embolism or embolic stroke. The safety of enoxaparin⁵ alone or low-dose aspirin alone⁶ in pregnancy is well established and combination usage in patients with certain hypercoagulable states has shown to be beneficial for preventing spontaneous abortion.⁷ The risks of combined enoxaparin and low-dose aspirin, including epidural/spinal haematoma with regional anaesthesia, were discussed with the woman and her family.

The most serious risk for SCI women during labour is autonomic hyperreflexia. Autonomic hyperreflexia is a life-threatening reflex associated with injuries to the neck or

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upper back that is attributed to loss of hypothalamic control over sympathetic spinal reflexes in viable spinal cord segments distal to the injury.^{2,8} Symptoms are facial flushing, diaphoresis, nasal congestion, severe headache, hypertension and cardiac arrhythmia. During pregnancy autonomic hyperreflexia can result in maternal–fetal morbidity including hypertensive encephalopathy, cerebrovascular accidents or death.⁸ Autonomic hyperreflexia occurs in about 85% of pregnant women with SCI at or above T6^{3,4,9} and most commonly presents during labour.⁸ In order to decrease the incidence of autonomic hyperreflexia, current recommendations are to avoid stimuli such as distension or manipulation of the vagina, bladder, urethra, or bowel³ and to include regional and general anaesthesia early in labour.^{8,10} Some recommendations include use of pharmacological therapy such as ganglionic blockers, alpha blockers and hydralazine.⁹ Induction of a patient with SCI has not been contraindicated according to current data.⁸ There are no current recommendations or specific indications for caesarean delivery in women with SCI, and standard obstetric indications with clinician judgement should be utilized.

Inadequate education about pregnancy in reproductive-aged women with SCI is common.¹¹ Female fertility and sexual function is usually not affected by SCI and about 14% of women with SCI have at least one pregnancy after their injuries.¹¹ Patient education about contraception and conception is therefore extremely important in this patient population during the rehabilitation process. When a patient has decided to conceive, the physician should be aware of the possible complications and utilize preventative methods to avoid morbidity and mortality described above. Preconception counselling with the patient with SCI should include discussion about decreasing or changing medications that may be harmful to the fetus, the increased risk of urinary tract infections, preterm labour, thromboembolic events or worsening of associated chronic medical conditions.

The patient's general medical status should ideally be optimized before conception. In the cases of congenitally acquired SCI, genetics counselling should be arranged prior to conception. All of the patient's specialty physicians should be involved during the medical care of the SCI patient approaching pregnancy and childbirth, as well as in the postpartum period to ensure continuity of care. Overall, the expectation for women with SCI in pregnancy is that a healthy prenatal,

labour and delivery can be achieved with precautionary guidance and monitoring.

DECLARATIONS

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