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Case Report

Pregnancy in a diagnosed case of cauda equina syndrome and it's management: a case report

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ABSTRACT

As with many rare conditions, little is known about cauda equina syndrome (CES) and reproduction. Knowledge pertaining to complications during pregnancy and its management in a patient with diagnosed case of CES is even more scant. The information which we have is from attending on individual cases who presented with CES diagnosed during pregnancy. The following case report demonstrates pregnancy in a known case of CES, diagnosed after sustaining a burst fracture of lumbar vertebrae followed by surgical decompression at puberty. Patient conceived spontaneously with residual disease as symptoms of perineal numbness, sensory deficit in both lower limbs and persistent saddle hypoesthesia along with foot drop and gait abnormalities and presented at 30 weeks of gestation. CES is an unusual entity that appears in between 2-6% of all cases of disc herniation in the lumbar segment. Related post-traumatic presentations are extremely rare. Pregnancy exacerbates most problems associated with spinal cord injury. Autonomic dysreflexia may present as a complication in a case of pregnancy with CES which may be life threatening and requires immediate treatment. Antenatal management and complications of pregnancy in a diagnosed case of CES has not been documented till date.

Keywords: Cauda equina syndrome, Spinal cord injury, Autonomic dysreflexia, Pregnancy

INTRODUCTION

Cauda equina syndrome (CES) occurs when the nerve roots of the cauda equina are compressed and disrupt motor and sensory function to the lower extremities and bladder. Patients with this syndrome are often admitted to the hospital as a medical emergency. CES can lead to incontinence and even permanent paralysis.[1] Pregnancy exacerbates most problems associated with spinal cord injury. Autonomic dysreflexia may present as a rare complication in a case of pregnancy with CES during labor which may be life threatening and requires immediate treatment.[2] Antenatal management and complications of pregnancy in a diagnosed case of CES has not been documented till date. Our case report discusses about complications and management of pregnancy in a patient with CES, who delivered a term live baby after elective caesarean section at 37 weeks of gestation.

CASE REPORT

A 24 years old primigravida, known case of CES, presented to our setup at 30 weeks of gestation. She was diagnosed as a case of CES after sustaining an unstable burst fracture of lumbar vertebrae (L1) with dislocation due to fall from height (15 feets) followed by emergency surgical decompression i.e.; posterior stabilization with pedicle screw and rods at D12-L2 vertebrae at 14 years of age (Figure 1).

Post-surgically patient was in spinal shock. Three years later, she was diagnosed as a case of CES with residual

disease as symptoms of perineal numbness, sensory deficit in both lower limbs and persistent saddle hypoesthesia along with foot drop and gait abnormalities. Patient was on bowel and bladder training along with physiotherapy. She conceived spontaneously after 1 year of non-consanguinous marriage, with no history of any miscarriage.

Figure 1: MRI showing burst fracture of lumbar (L1) vertebrae.

During her pregnancy, patient gave history of persistent lower backache with numbness, radicular lumbosciatic pain, occasional urinary and fecal incontinence. Patient was given routine antenatal care along with first and second trimester screening, growth scan, fetal Doppler study at 28, 32, 36 weeks and serial ultrasound for cervical length measurement. Dexamethasone coverage for fetal lung maturity was given at 34 weeks of gestation as the patient was at risk for preterm labor.

On examination, patient was conscious, oriented with stamping gait. Muscle tone in both lower limbs were normal. Power in hip extensors and abductors, knee flexors and all the muscles responsible for movement of ankle joint on right side was zero. The neurological examination was suggestive of patchy hypoasthesia in L4, L5 and S1 dermatome. There was reduced resting anal tone, reduced perianal sensation and reduced anal sphincter action along with reduced straight leg raising (SLR) on examination.

Patient was electively planned for caesarean section as mode of delivery due to obstetrical reason (contracted pelvis) with oligohydramnios and decreased fetal movements. Patient was unable to flex spine on examination. Operative delivery was suggested for fetal and maternal safety. An alive male baby of 2.65 kg was delivered.

Post-cesarean patient was monitored for rare features of autonomic dysreflexia, deep vein thrombosis. She was ambulated on post-operative day 2. There wasn't any history of urinary or fecal incontinence or retention in the post-operative period. Patient was advised contraception as routine post-natal counselling and for follow up in orthopedics OPD for further line of management and physiotherapy.

DISCUSSION

Information about pregnancy and labor in a diagnosed case of CES is scarce. Information pertaining to complications in pregnancy in a patient with CES is even more scant. Other case reports published related to pregnancy and CES are those in which CES was first time ever diagnosed as a medical emergency during pregnancy.

Presentations of CES during pregnancy includes lower backache, urinary and fecal incontinence. An emergency MRI must be performed. The patient diagnosed to have CES during pregnancy need emergency surgical decompression within 24-48 hours of presentation for minimizing the neurological sequelae.[3] Termination of pregnancy is not advised for such a condition.

Causes of CES includes: trauma, intra/extra-medullary spinal tumors, metastatic spinal tumors, lymphoma, hematoma, degenerative spondylotic disease, iatrogenic i.e.; following lumbar disc surgery, epidural lipomatosis.[4] Three classic patterns of presentation have been described: (a) Type 1: presents acutely as the first symptom of lumbar disc prolapse; (b) Type 2: presents as the endpoint of a long history of chronic lower back pain with or without sciatica; and (c) Type 3: presents insidiously with slow progression to numbness and urinary symptoms.

In our case report, the patient was already a diagnosed case of CES. Obstetric management of patients with known case of CES hasn't been discussed about much in literature. Common complications affecting women with SCIs include urinary tract infections (UTIs), falls, pyelonephritis, hypertension, pneumonia, preeclampsia, and preterm labor.

In one study, thrombosis (8%), urinary complications (59%), dysreflexia (27%), and worsened spasticity (22%) were the most common complications in pregnancy, and postpartum depression (35%) was the most common postpartum complication.[5] Pregnancy in women with CES should be managed by a multidisciplinary team approach involving specialists, which may include an obstetrician with experience in caring for women with disabilities, maternal-fetal medicine subspecialists, anesthesiologists, spinal rehabilitation physicians, nurses, physiotherapists, occupational therapists, lactation consultants, pediatricians, and neonatologists.[6,7]

Women with CES who are considering pregnancy should have a pre-pregnancy evaluation, and the risks and benefits related to having an SCI while pregnant should be discussed.[8] Chronic medical conditions and the woman's adaptation to her disability should be addressed. Baseline

pulmonary function and renal studies may be appropriate.[9] Fertility in these patients usually is not affected, and family planning should be discussed.[10] Management of autonomic dysreflexia during labor has been discussed in Figure 2.

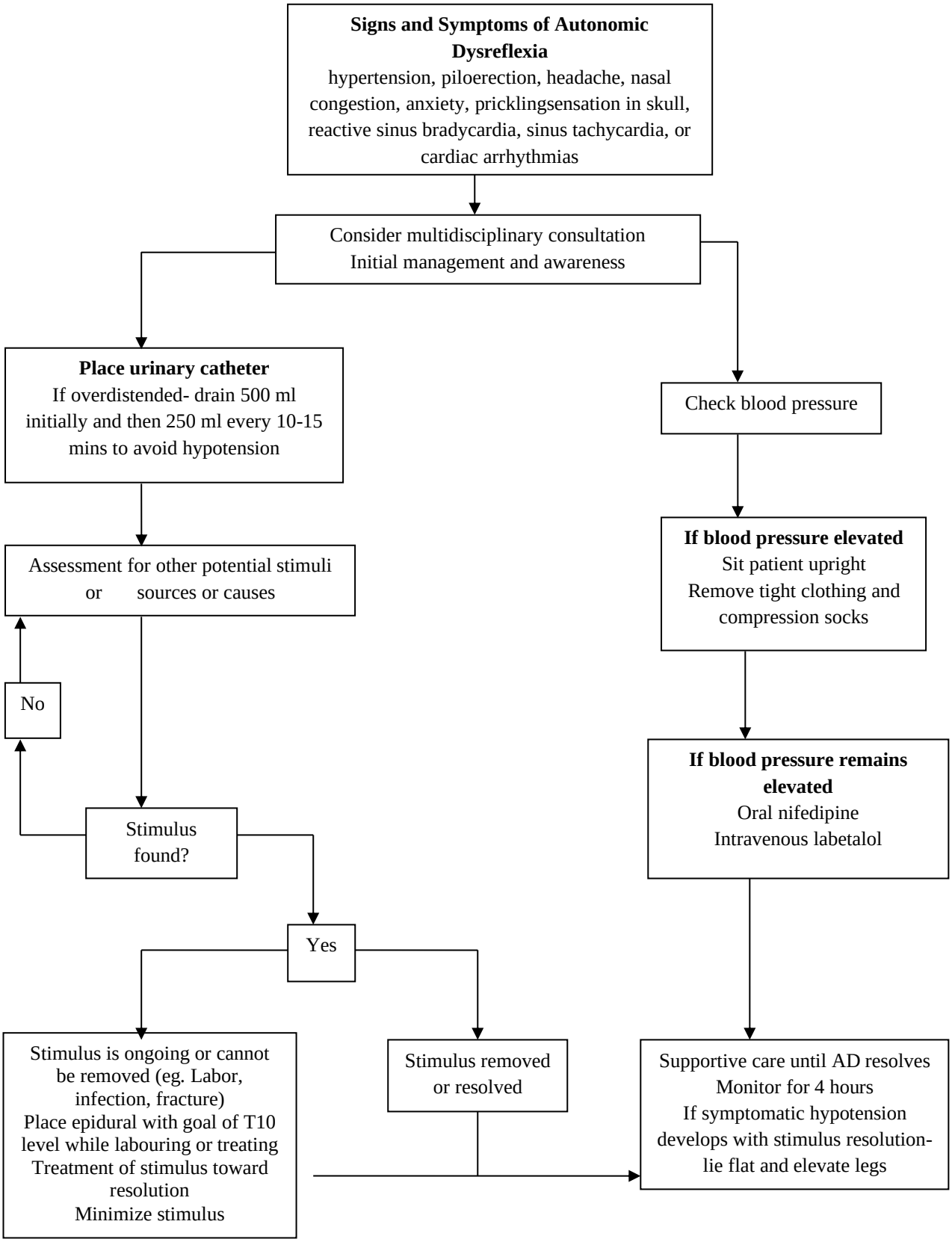

Figure 2: Initial recognition and management of autonomic dysreflexia.

CONCLUSION

To sum up, pregnancy in CES is a high-risk pregnancy, and it is important to have frequent antenatal checkups with baseline renal and pulmonary function tests along with first and second trimester screening, growth scan, fetal Doppler study, serial cervical length measurements to prevent preterm labor. Any urinary tract infection must be treated during pregnancy and trial of labor can be given to a patient with CES. There must be a multi-disciplinary approach for the management of pregnancy and complications in patients with CES. Rarely, there may be chances of autonomic dysreflexia that should be monitored throughout the labor and in the post-natal period. Patient must be followed up for neurological sequelae if any and correction of deformity if present.

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