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Case Report

Giant myelomeningocele presenting as obstructed labor: a rare cause of dystocia

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ABSTRACT

Myelomeningocele is a severe open neural tube defect resulting from failure of neural tube closure during early embryogenesis. Although commonly diagnosed antenatally, large lesions may occasionally present intrapartum and cause obstructed labour. We report a case of a 25-year-old woman presenting in advanced labor with obstructed delivery. Antenatal ultrasonography revealed a large cystic lumbosacral mass with polyhydramnios. In view of obstructed labor, an emergency cesarean section was performed. Intraoperatively, a giant lumbosacral cystic mass was identified, causing obstruction at the pelvic brim. Aspiration of cystic contents facilitated delivery. Postnatal evaluation confirmed the diagnosis of giant myelomeningocele. Giant myelomeningocele is a rare but important cause of obstructed labor. Early antenatal diagnosis, regular antenatal care, and timely referral are essential to prevent maternal and neonatal morbidity.

Keywords: Myelomeningocele, Neural tube defect, Obstructed labour, Dystocia, Antenatal diagnosis

INTRODUCTION

Neural tube defects (NTDs) are among the most common congenital anomalies worldwide, with an estimated 214,000–322,000 affected pregnancies annually.[1,2] Myelomeningocele, a severe form of open spinal dysraphism (spina bifida aperta), results from incomplete closure of the neural tube during early embryogenesis. The condition is multifactorial in etiology, involving genetic, environmental, and maternal factors, with folate deficiency being the most significant preventable cause.[1-3]

Maternal risk factors include obesity, diabetes mellitus, teratogenic drug exposure, poor nutritional status, and inadequate periconceptional folic acid supplementation. Prenatal diagnosis is commonly achieved through maternal serum alpha-fetoprotein screening and characteristic ultrasonographic findings.[4-6] Despite advances in antenatal imaging, delayed diagnosis may result in intrapartum complications such as obstructed labor, increasing maternal and perinatal morbidity.

CASE REPORT

A 25-year-old woman presented to a tertiary care hospital in Agra in January 2026 with a history of nine months of amenorrhea and difficulty in labor. She came from a remote area after being in labor for two days at home. On admission, she was dehydrated, exhausted, and in active labor.

On per abdominal examination, the abdomen was distended and tense, and fetal heart sounds could not be localized. Per vaginal examination revealed partial expulsion of the fetal head, neck, and thorax through the vaginal canal, with features of fetal distress and a cystic mass was felt whose boundaries could not be reached. Ultrasonography at 32 weeks of gestation showed a single

live foetus with a large multiloculated cystic lesion over the lumbosacral region measuring 12×9×9 cm, associated with polyhydramnios. No other congenital anomalies were detected. Laboratory investigations were within normal limits.

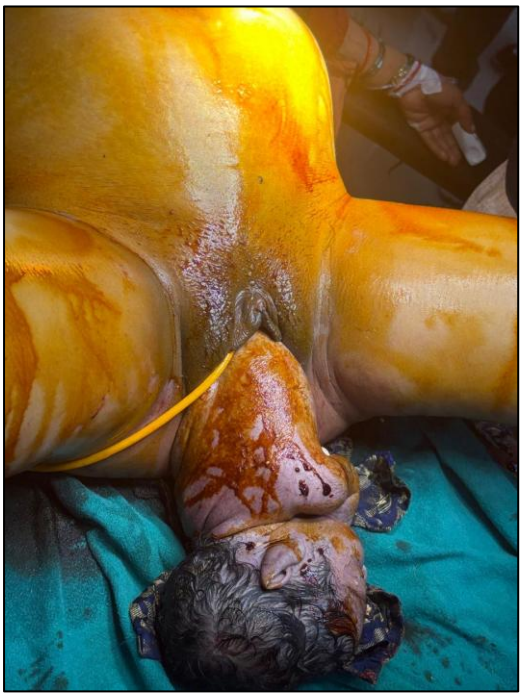

Figure 1: Showing partially delivered obstructed foetus.

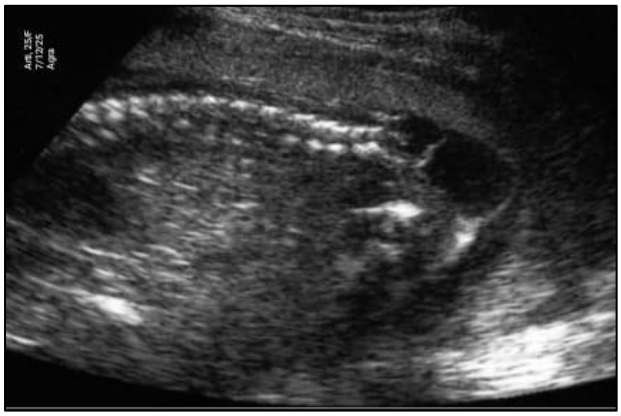

Figure 2: Depicting septated cystic swelling over lumbosacral region of foetus, likely meningomyelocele.

In view of obstructed labor, an emergency cesarean section was planned. Under spinal anesthesia, a Pfannenstiel incision was made. A large cystic mass measuring approximately 15×10×10 cm was noted over the fetal lumbosacral region, causing obstruction at the pelvic brim. Aspiration of cystic contents was performed using a wide-bore needle, following which the baby was delivered vaginally. The neonate was handed over to the pediatric team. The postoperative period was uneventful. The mass was clinically diagnosed as a giant myelomeningocele. Histopathological examination is awaited.

Figure 3: Newborn with large lumbosacral swelling, likely meningomyelocele.

DISCUSSION

Obstructed labor is a major preventable cause of maternal and perinatal morbidity and mortality. While cephalopelvic disproportion and malpresentation are common causes, fetal congenital anomalies such as large neural tube defects may rarely lead to dystocia. Maternal complications include postpartum haemorrhage, puerperal sepsis, uterine rupture, and wound dehiscence, with maternal mortality reported in 3–14% of cases.[7] Though multifactorial in origin, the risk of NTDs in subsequent pregnancies increases to 2% to 3% after 1 affected pregnancy and nearly 5% to 10% after 2 affected pregnancies.[3,4]

Though raised Alpha fetoprotein, ultrasonography can help in identifying NTDs but maternal serum alpha fetoprotein as screening tool, amniotic fluid alpha fetoprotein and acetylcholinesterase as confirmatory test.[4,5] Ultrasonography is a safe, non-invasive, cost effective technique used during second trimester anomaly scan.[6] Additional cranial features of spina bifida that are visible through ultrasonography include polyhydramnios, hydrocephalus, microcephaly, small-shaped cerebellum, and abnormal cranial bones. Additional conditions associated with myelomeningocele, such as chromosomal anomalies, dilated renal tracts, or talipes equinovarus, may also be detectable. Fetal karyotyping, computed tomography (CT), or magnetic resonance imaging (MRI) can serve as adjunctive imaging options.[1] Once the diagnosis of myelomeningocele is confirmed,

consideration should be given to prenatal closure of the defect. After the delivery of an infant with an open spinal dysraphic defect, surgical repair should be performed within the first 48 to 72 hours to reduce the risk of wound infections and ventriculitis.[8-10]

Classification of neural tube defects

According to Lemire classification, neural tube defects are broadly categorized into two main types: Spina bifida occulta and Spina bifida aperta. Spina bifida occulta is the milder, closed form, often without protrusion of the spinal contents. In contrast, Spina bifida aperta represents the open forms and includes meningocele, where only the meninges protrude; myelomeningocele, where both the meninges and spinal cord herniate; and myeloschisis, the most severe form, characterized by an open, exposed neural tissue without skin covering (Figure 4).

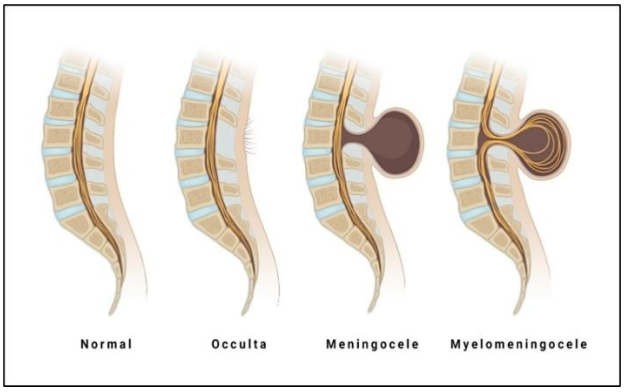

Figure 4: Spectrum of NTD'S ranging from spina bifida occulta to spina bifida aperta.

Early antenatal care, routine anomaly scanning, and maternal serum screening play a crucial role in early detection of neural tube defects. Periconceptional folic acid supplementation significantly reduces the incidence of NTDs and remains a key preventive strategy. Differential diagnosis of fetal lumbosacral mass causing obstructed labor includes sacrococcygeal teratoma, caudal NTDs, terminal myelocystocele, rhabdomyosarcoma, currarino syndrome, neuroenteric cyst, tail remnant, caudal regression syndrome.

CONCLUSION

Giant myelomeningocele is a rare but significant cause of obstructed labor. Adequate antenatal care, early anomaly detection, timely referral, and multidisciplinary management are essential to reduce maternal and neonatal morbidity. Periconceptional folic acid supplementation remains the cornerstone of prevention.

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