Enormous Myelomeningocele of a Newborn: 
Case Report and Review of the Literature

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ABSTRACT

The myelomeningocele is a serious pathology with heavy consequences putting at stake the vital prognosis of the child, it is a congenital malformation resulting from a defect of closure of the neural tube. We report the case of a 25-day old newborn, in whom the antenatal diagnosis of myelomeningocele was confirmed by morphological ultrasound. The particularity of our case is the very low age of intervention as the enormous size of the myelomeningocele. Many congenital malformations of the central nervous system can be associated with this pathology going from the malformation of Arnold Chiari to the heterotopia, the discovery of this malformation imposes a complete malformative assessment, and a medical-surgical management. The main postoperative risk is sepsis which is all the more serious and mortal that the age is young of the child at the time of the intervention.

Keywords: Enormous Myelomeningocele, management, spina bifida.

I. INTRODUCTION

The myelomeningocele, commonly called spina bifida, corresponds to a group of congenital malformations resulting from a defect of closure of the neural tube of variable extent, it is a serious pathology having heavy consequences on the future of the child. The diagnosis can be made in the antenatal period thanks to morphological ultrasound. The etiology is not known in most cases. People with spina bifida need medical and surgical care.

II. PATIENTS AND METHODS

This was a 25-day-old female newborn, without any particular pathological history, in whom spinal dysraphia was suspected at the 5th antenatal month by the gynecologist and then the diagnosis was confirmed by morphological ultrasound which had objectified a lumbosacral formation with a bony defect. Apart from this malformation, the intrauterine development was without particularity, and the birth was by caesarean section programmed at 38 SA.

At birth, the diagnosis was obvious with the discovery of an epidermal mass in the lumbosacral region measuring 18 cm in length and 15 cm in height with translucent contents and a richly vascularized wall (Fig. 1).

Fig. 1. Immediate preoperative image of the MMG, showing a huge MMC pocket.
A brain scan was performed showing a discrete tri-ventricular dilatation probably associated with an Arnold Chiari type II malformation.

The patient was operated on under general anesthesia in the right lateral decubitus position. A puncture of the liquid in the pouch with an 18 G syringe enabled us to evacuate 60 ml of clear CSF very gently. We then proceeded to make a circumferential incision at the limit of the healthy skin (Fig. 2), then dissected the subcutaneous plane and discovered the neural plate, which was put back into the vertebral canal, and then closed it plane by plane in an airtight manner (Fig. 3).

The postoperative course was simple, in the context of apyrexia, with good neurological evolution of the patient and good healing of the wound.

![Image](image-url)

**Fig. 2. Image of the MMC wall after incision.**

![Image](image-url)

**Fig. 3. Immediate postoperative image showing the extent of the incision made with separate loose tight stitches.**

### III. DISCUSSION

Myelomeningocele (MMC), commonly known as spina bifida, is a congenital anomaly in which the spinal cord does not develop properly due to incomplete closure of the neural tube on day 28 of gestation [1]. Both genetic and non-genetic factors contribute to neural tube defects, the genetic component has been estimated to be 60-70%, while non-genetic factors mainly influence neural tube closure when associated with a predisposing genotype [2].

The clinic presents with varying degrees of motor and sensory impairment as well as urinary and fecal incontinence [3], however, the outcome of affected patients also depends on associated brain malformations ranging from Chiari malformation and hydrocephalus to heterotopia, gyriﬁcation defects and other neocortical abnormalities as well as hypoplasia or aplasia of the cranial nerve nuclei, agenesis of the corpus callosum, and reduction of total white matter with increased neocortical thickness in frontal regions [4], [5]. Orthopaedic abnormalities, including club feet, contractures, hip dislocation, and scoliosis, are frequently observed, as well as urogenital abnormalities.

Prenatal diagnosis first became possible in the early 1970s with the discovery of elevated alpha-fetoprotein (AFP) in amniotic fluid samples from pregnancies with anencephaly or myelomeningocele [6]. In parallel with the development of the diagnosis of neural tube defects by Afp, the 1970s also saw improvements in ultrasound that led to the non-invasive diagnosis of MMC and other NTDs [7]. Today, the fetal spine can be examined by ultrasound in the 3 sagittal, axial, and coronal planes from the end of the first trimester, providing the primary and most accurate mode of prenatal diagnosis.

The treatment of NTDs is multidisciplinary, with newborns with spina bifida best managed after central nervous system imaging studies and subsequent head circumference measurements to assess the need for shunting, this management must be rapid to avoid complications including infection [2].

Orthopaedic deformities are usually treated soon after birth, with long-term follow-up. Patients are also monitored by ultrasound and urodynamic studies to detect urological complications resulting from abnormal neurological bladder function. These include urinary retention with overflow and ureteral reﬂux which can lead to recurrent urinary tract infections and ultimately deterioration of renal function [2].

The prevention of neural tube defects by folic acid is effective [8].

### IV. CONCLUSION

The management of children with spina bifida has improved dramatically over the past 50 years, Surgical correction of spina bifida is combined with comprehensive care to achieve good clinical outcomes and quality of life for affected patients as they progress from childhood to adulthood.

### CONFLICT OF INTEREST

Authors declare that they do not have any conflict of interest.

### REFERENCES


DOI: http://dx.doi.org/10.24018/ejmed.2023.5.6.1809

Vol 5 | Issue 6 | December 2023
