

GASTROCHIASIS – CASE REPORT**Kuldeep Singh^{1*}, Ashish Varma², Shivali Bharuka³, Anjali Kher⁴, Rupali Salve⁵ and Jayant Vagha⁶**¹Junior Resident, ²Associate Professor, ³Junior resident, ⁴Associate Professor, ⁵Senior Resident, ⁶Professor, Department of Pediatrics, Acharya Vinoba Bhave Rural Hospital, Sawangi (M) Wardha Maharashtra India.***Corresponding Author: Dr. Kuldeep Singh**

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ABSTRACT

Gastrochisis is a congenital anterior abdominal wall defect characterized by evisceration of intra-abdominal organs without covering membrane through a defect in form of cleft on the right side of umbilical cord. Due to failure of the right omphalomesenteric artery a full-thickness anterior abdominal wall defect arises in this area, thus abdominal organs herniate through this defect. Incidence of gastrochisis 1 in 100000 population.

KEYWORD: Gastrochisis.**INTRODUCTION**

Gastrochisis is a congenital anterior abdominal wall defect characterized by evisceration of intra-abdominal organs without covering membrane through a defect in form of cleft on the right side of umbilical cord.

First defined by Calder in 16th century in the medical literature, it means “cleft belly” in the Ancient Greek language and was. There were no reports of survivors until Watkins closed the defect on a baby with gastrochisis in 1943.^[1,2]

Due to failure of the right omphalomesenteric artery a full-thickness anterior abdominal wall defect arises in this area, thus abdominal organs herniate through this defect.^[3]

In our case, the diagnosis of gastrochisis is established at the prenatal fourth month by the detection of right paraumbilical defect.

CASE REPORT

A female baby from her 25-year-old mother’s first pregnancy was born by caesarean section (c-section) at her 35th gestational week. During the USG examination performed at the prenatal 4th month on the mother followed up regularly in AVBRH Sawangi (M) Wardha, the localization of the baby’s intestines was noticed to be outside of the abdomen.

There was no history of gestational diabetes mellitus, gestational hypertension, vaginal discharge and vaginal bleeding. Informed consent was obtained from the parents regarding using the medical records and documents of the baby for scientific purposes.



C-section was performed on the patient in the operation room and after that, she was taken under radiant heater. The baby cry immediately after birth. The APGAR score was 8.

Having applied wet dressing to the intestines outside, the case was transferred to newborn intensive care.



The patient was operated due to gastrochisis at postnatal 1st day.

DISCUSSION

Gastrochisis remains as one of the congenital abdominal wall defect. Anterior abdominal wall muscles develop from muscle cells migrating from myotomes into the somatic mesoderm, which appears in the end of the 2nd week of intrauterine life. There are various theories established to explain the embryo pathogenesis related to the appearance of the anomaly. These theories contain possible pathologies such as a vascular accident associated with right umbilical vein or right omphalomesenteric artery, a rupture occurring on the bottom of umbilical cord during the physiologic herniation of intestines. No matter which of them occurred, the primer cause for the appearance of the anomaly is the inconsistency of the interaction between ectoderm and mesoderm which is normally supposed to compose anterior abdominal wall in the end of the 3rd week of intrauterine development.^[4]

Gastrochisis, also known as “laparochisis”, is encountered in one of 10000 newborns. The incidence does not vary concerning race or gender. However, it is indicated that being a mother in a very young age rises the risk of gastrochisis.^[5-7] Another aspect regarding the disease is that for mother to be a smoker. It is shown that smoking increases the risk of encountering anterior abdominal wall defect by 2.1 times.^[7] Werler et al.^[8] reported taking pseudoephedrine increases the risk of gastrochisis by 3 times, while salicylate and acetaminophen by 11 times.

The defect on anterior abdominal wall is a 2-4 cm sized full-thickness abdominal wall defect located on mostly right, rarely left lateral side of umbilical cord. The

location of umbilical cord remains unchanged. Frequently intestines and sometimes stomach, colon herniate towards the outside of abdomen. In some cases; bladder, uterus, tubes even testicles and ovaries may also eviscerate through the defect. If liver occasionally is located outside of the defect, this indicates poor prognosis.^[4]

The organs herniating outside are not covered by membrane. Due to this fact and chemical effect of amniotic fluid, the intestines are inflamed. The quality of the intestines is the major factor, which determinates the prognosis of a patient with gastrochisis. The intestines become thicker due to the contact with amniotic fluid, sometimes they even could contain calcifications. Detection of calcification could lead to the consideration of intestinal perforation. Observing the expending intestinal diameter and the increase of wall thickness in the USG examination demonstrates intestinal damage. Polyhydramnios could be considered if intestinal obstruction occurs.

One of the major techniques contributing to antenatal diagnosis of gastrochisis is to determine alpha-fetoprotein (AFP) and amniotic-fluid acetylcholinesterase levels in mother’s blood. Fetal ultrasonography and/or magnetic resonance imaging brings significantly benefit to diagnosis. The fact that AFP level could also rise in fetal anomalies such as spina bifida should always be taken into consideration, thus it is recommended to determine the acetylcholinesterase/pseudo cholinesterase ratio in amniotic fluid if encountered with these situations. Valid USG results could only be achieved after 14th-17th gestational week. The ultrasonography image of gastrochisis is seen as small anterior abdominal wall defect located right lateral side of the umbilical cord and intestines dangling from this area to amnion space.^[4] Colored Doppler Ultrasound could be used to demonstrate normal umbilical cord access.^[3] The safest transport of newborn is done in mother’s abdomen. That is why fetuses, who are expected to be born at risk, should be delivered in centers providing newborn intensive care unit.

There is no consensus about delivering babies antenatal diagnosed with gastrochisis by planned c-section. Furthermore, delivering the baby by c-section does not affect the prognosis significantly except the reduction of the risk of intra-abdominal organ trauma and infection. Predating the birth to a very early date does not bring significant benefit, rather causes problems related to prematurity. If there are no problems associated with fetal distress or intestinal damage, delivering the baby in around 37th week could be relevant.^[4] The transfer of the baby to a center in time providing antenatal, obstetric, neonatal and pediatric surgery care coordinately remain as the important issue in the management of the disease. As for babies born with anterior abdominal wall defect, the measures that must be taken and life support given after the birth immediately affect mortality and morbidity significantly. Following the birth of the baby, the

segments of the intestines located outside of the abdomen should be covered by sterile wet gauze bandage or plastic film, thus baby should be kept warm and fluid, electrolyte replacement should be applied.

Due to localization of the intestines outside the ventral cavity, these babies are in tendency to lose their body fluids and their body temperature tend to be lowered easily. In order to provide adequate urine output and maintain the acid-base equilibrium, fluid a few times more than the essential amount for an ordinary newborn could be necessary to replace into the babies with gastrochisis (150-200 ml/kg).

Treatment modalities such as primary closure, establishing a ventral hernia to be closed later, silastic silo are preferred recently.^[9] the prognosis is considered as good because of the frequency of having associated anomaly is low among the babies with gastrochisis. The mortality rate is known as between 5%-15%, mean 7.7%, provided respiratory circulatory insufficiency, sepsis or complications regarding total parenteral nutrition were not encountered.^[4] The survival rate is stated as 96% in cases with isolated gastrochisis treated in sufficient centers.^[10]

Consequently, babies with gastroschisis represent an improved prognosis, parallel to advances in medicine in recent years. We are of the opinion that terminating these pregnancies is not a necessity. Therefore, diagnosing these babies in their prenatal early periods and transferring them to an experienced medical center containing multidisciplinary working facilities will contribute to the health of both mother and the baby.

CONCLUSION

Improved understanding of gastroschisis, its early diagnosis by prenatal ultrasound, safe delivery of the foetus with a ventral wall defect, advanced surgical techniques for its correction and intensive care management of neonates reduces the morbidity and mortality.

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