Recurrent case gastroschisis in a 23 year old woman
Case Report

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Introduction
Gastroschisis also referred to as Paraomphalocele, laparoschisis or abdominoschisis is a rare congenital lateral abdominal wall defect through which part of the intestines and possibly other abdominal organs protrude.\(^1\) It has an incidence of 0.5-0.8: 10,000 births.\(^2\)

Etiology is unknown but environmental and genetic factors may cause an obstruction of the omphalomesentric artery and secondary breakdown of the abdominal wall.\(^3\) Aside from the more common sporadic occurrence, gastroschisis may be part of chromosomal and some inherited syndromes.\(^4\)

It has good prognosis if not associated with a syndrome. Gastroschisis occur predominately in infants of mothers who are less than 25 years of age, and familial recurrence is rare. Torfs and Curry found only six published reports of familial recurrence of gastroschisis.\(^5\) Prenatal diagnosis is possible via obstetric ultrasonography, and since prognosis depends mainly on the condition of the bowel at birth, early detection can improve prognosis.\(^6\)

This case is presented because of its rarity and reoccurrence in the same patient.

Case Report
T.M is a 23-year-old G P, petty trader, presenting to the ultrasound suite with 32weeks amenorrhea. She had her first baby at 19 years old, the pregnancy though unbooked and unsupervised was uneventful, and the child is alive and well. The second pregnancy two years later was also unbooked and uneventful until at birth, which took place at home and was said to have been supervised by a traditional birth attendant, she was delivered of a dead fetus with anterior abdominal wall defect. No other anomaly was reported. A history of a sibling with similar presentation who died at the neonatal period was also volunteered.

The present and third pregnancy was also unbooked, she only sought medical assistance following a persistent fever at 32weeks gestation. Physical examination revealed a middle aged woman not pale, anicteric, well hydrated but febrile (39.2°C). Obstetric examination showed a large gravid abdomen with symphysiofundal height of 30cm in keeping with 30 weeks gestation, palpable active fetal pole. Clinical impression of malaria in pregnancy was made. Routine investigations which include obstetric ultrasound and laboratory investigations were ordered. Hematological investigation revealed malarial parasites [++]

Ultrasound shows a single fetus at 32 weeks gestation as dated by biparietal diameter and femur length, with a large anterior abdominal wall defect with the umbilical cord attached lateral to it (figure 1), free floating thickened wall bowel loops were noted within the amniotic fluid, a greater part of the liver is also seen herniating through the defect. Amniotic fluid is adequate. No other anomalies were noted, and heart motion showed normal rhythm. Fetal biophysical profile was normal.

A radiological diagnosis of gastroschisis was
made and patient was prescribed a biweekly fetal biophysical profile throughout the remainder of the pregnancy, but patient defaulted and we lost contact with her.

**Figure 1:** Ultrasound image showing anterior abdominal wall defect with the solid organs and bowel loops herniating out and in direct contact with amniotic fluid. **ST** = stomach.

**Discussion**

Gastroschisis is a full-thickness paraumbilical defect in the abdominal wall, usually located to the right of the umbilical cord, through which abdominal viscera protrude; there is no covering membrane. The umbilical cord inserts normally onto the fetal abdomen as were observed in this this case. The pathogenesis of gastroschisis is controversial, but a recent theory suggests that it results from disruption of the right omphalomesenteric artery in early gestation. The frequency of associated anomalies is much lower than with omphalocele, ranging from 8 to 21%. Gastroschisis has a low recurrence rate in the order of 3.5% for siblings. Some earliest published reports of familial occurrence showed recurrence occurring in sibs, half sibs, first cousins, second cousins, and uncle and nephew in these families. All affected members were related through maternal lines, which concurred with this case who had a sister with anterior abdominal wall defect. Kimberly et al in 1994 reported two cases of familial occurrence of gastroschisis, both were diagnosed via ultrasonography. The two cases were children of the same father but different mothers, this was the first reported case of familial occurrence in a paternal half sibling.

The prenatal diagnosis of abdominal-wall defect with ultrasound enable physicians to make early diagnosis, and also to differentiate between omphalocele and gastroschisis. The overall survival rate for neonates born with an abdominal wall defect has been reported to be 70-96%. Patients with gastroschisis may have a better prognosis than those with omphalocele, because omphalocele is associated with a higher frequency of coexisting anomalies. In this patient no other gross fetal anomaly was detected on the prenatal ultrasonography. Sonographic diagnosis is based on visualizing of free bowel loops and viscera projecting from a deficient anterior abdominal wall of the fetus. Differentiation of gastroschisis from omphalocele has been based on the site of cord insertion, in gastroschisis anterior wall defect are usually lateral to the site of cord insertion, absence of covering membrane, and type of viscera protruding into the defect. Using these criteria, the correct diagnosis of omphalocele and gastroschisis were noted in 75% of cases by Bair et al. The same study also observed the association of polyhydramnios and fetal ascites with omphalocele and its rarity with gastroschisis, none of these were visualized in this case which further strengthens the diagnosis. Solid viscera as hernial content is said to be rare with gastroschisis, only in about 7% cases did Bair et al, observed the liver as part of the herniating structures, a greater part of liver is noted herniating through the defect in this case. In gastroschisis, bowel loops are often thickened and matted together, this is caused by chemical peritonitis due to contact with fetal urine in the amniotic fluid, the case under study showed evidence of bowel thickening.

The need for correct diagnosis is important in early pregnancy because of the higher incidence of other anomalies and chromosomal defects in omphalocele, and the good prognosis of gastroschisis with proper management in the neonatal period.

**References**
