



## Abdominal wall defects: prenatal diagnosis, management, and perinatal outcomes

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**INTRODUCTION:** The most frequent abdominal wall defects are gastroschisis and omphalocele. Gastroschisis is a full-thickness paraumbilical abdominal wall defect usually associated with evisceration of bowel and sometimes other abdominal organs. Omphalocele is a midline abdominal wall defect (absent skin, fascia, abdominal muscles) of variable size at the base of the umbilical cord. The prevalence of each is approximately 3 to 4 per 10,000 live births plus fetal deaths/stillbirths/pregnancy terminations. An adequate prenatal ultrasound screening in the first trimester is necessary to diagnose this pathologies.

**OBJECTIVES:** 1. Literature review in order to update this topic and search about the available scientific evidence. Identification of the most relevant variables for the study. 2. Establish a registry of cases of abdominal wall defects diagnosed prenatally at the Central University Hospital of Asturias (HUCA). Assess antenatal management and perinatal outcomes.

**METHODS:** First, a literature review was conducted on major databases and scientific platforms, including the Fetal Medicine Foundation website. Secondly, a descriptive study of cases of abdominal wall defects diagnosed by prenatal ultrasound scan between 2018 and 2023 in our center was carried out (hospital with neonatal intensive care and pediatric surgery). Ultrasound scans performed by one of the gynecologists with experience in prenatal diagnosis. Variables included in the study: maternal age, trimestre of diagnosis, other malformations/pathology, fetal genetic studies, chromosomal abnormalities, amniotic fluid volume, gestational age at delivery, mode of delivery, birth weight, Apgar, time of surgical repair, postsurgical outcomes. Exclusion criteria: loss of patient follow-up.

All patients gave their approval to the use of relevant data from their studies for scientific purposes.

**RESULTS:** 8 cases of abdominal wall defects were identified: 3 gastroschisis and 5 omphalocele.

All cases were diagnosed in the first trimester of gestation, except one of them who attended for the first time in the second trimester of gestation. One of the omphaloceles, diagnosed at week 12 of gestation, had associated fetal malformations. Primigravid mother, 38 years old, no relevant medical history. A chorionic villus biopsy was performed with the result of trisomy 13. An ultrasound was performed a week later, identifying a hydropic dead fetus. An uncomplicated abortion was performed following our hospital's protocol.

Regarding the mode of delivery, 2 of the 4 fetuses with omphaloceles were born by vaginal delivery. A cesarean section was performed in all cases of gastroschisis, one of them for abnormal fetal heart rate pattern.

Reconstructive surgery for the abdominal wall defect was performed in all cases except one with favorable postoperative results.

	Maternal age	Trimester of diagnosis	Other malformations/pathology	Invasive technique	Amniotic fluid volume	Gestacional age at delivery	Mode of delivery	Birth weight	Apgar	Time of surgical repair	Defect
1	26	First	NO	Chorial Biopsy, OK	Normal	36sg, because of a dilated loop of bowel	Scheduled cesarean	Girl, 2.395Kg	8	Immediately, no complications	Gastroschisis
2	36	First	NO	Amniocentesis, OK	Normal	41sg, spontaneous labour	Vaginal birth	Boy, 3.460Kg	9	After a week, no complications	Omphalocele
3	23	First	NO	Refused	Normal	35+5, because of the monitor	Urgent cesarean	Boy, 1.900Kg	7	Immediately, no complications	Gastroschisis
4	22	Second	Hidrops, intestinal atresia, CIR	Amniocentesis, OK	Increased	36+4, because of induction failure	Urgent cesarean	Girl, 2.000Kg	3	Immediately, no complications	Omphalocele
5	37	First	CIR	Amniocentesis, OK	Normal	37+3, spontaneous labour	Vaginal birth	Boy, 1.860Kg	9	After a week, with a complication	Omphalocele
6	29	First	Horseshoe kidney	Amniocentesis, OK	Normal	36sg	Scheduled cesarean	Girl, 2.200Kg	8	Immediately, no complications	Gastroschisis
7	36	First	Big kidney, sd Beckwith-Wiedemann	Amniocentesis, OK	Normal	38sg, because of 3 previous cesarean	Scheduled cesarean	Girl, 3.520Kg	9	No needed	Omphalocele
8	38	First	TN 4,8; facial halfway line	Chorial Biopsy, T13	Normal	DELAYED ABORTION					Omphalocele

Table 1. Abdominal wall defects identified in our hospital

### CONCLUSION

1. According to the literature, and also with our cases, the most frequent abdominal wall defects are gastroschisis and omphalocele.
2. Prenatal ultrasound screening allows to diagnose gastroschisis and omphalocele as early as in the first trimester, as in the cases we show, increasing the chance of optimal neonatal results.



Figure 1: Gastroschisis



Figure 2: Omphalocele

### REFERENCES

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