



Antenatal diagnosis and management of laparoschisis

Prepared by Dr. OUNG Monyraksmey,
Dr. TIM Pich Nissay and Team DAN



BACKGROUND

ក្រុមការងារបច្ចេកទេស prenatal diagnosis (DAN) ត្រូវបានបង្កើតឡើងនៅខែ កុម្ភៈ ឆ្នាំ2023 ក្នុងគោលបំណងសំខាន់ដូចជា ÷

- ស្រាវជ្រាវរកការលូតលាស់មិនប្រក្រតីរបស់ទារកក្នុងផ្ទៃ ដើម្បីកំណត់ការ ព្យាបាល និង ការថែទាំដ៏ត្រឹមត្រូវ។
- ផ្តល់ព័ត៌មានទៅឪពុកម្តាយ ក្នុងការរៀបចំខ្លួននាពេលបច្ចុប្បន្ន និង ទៅអនាគត សម្រាប់បន្តការបីបាច់ថែទាំទារកបន្ត។

សុខភាពល្អរបស់ទារកក្នុងផ្ទៃជាសំណួរ និង ជាកង្វល់ធំបំផុត របស់ឪពុកម្តាយ ហើយនោះជាមូលហេតុដែលការពិនិត្យត្រឹមត្រូវ និងហ្មត់ចត់ត្រូវបានធានាពេញ មួយពេលមានផ្ទៃពោះ។

ចាប់តាំងពីខែកុម្ភៈ រហូត ដល់ មិថុនា ឆ្នាំ2023 ភាពមិនប្រក្រតីរបស់គភីដែលយើងបានជួបមាន 36ករណី ដែលក្នុងនោះមាន:

- 14ករណី ទារកក្នុងផ្ទៃមានបញ្ហាផ្នែក ទ្រូង និង ពោះ
- 9ករណី មានបញ្ហាផ្នែកខួរក្បាល
- 6ករណី មានបញ្ហាផ្នែកអវយវៈ និង ឆ្អឹងខ្នង
- 4ករណី មានបញ្ហាច្រើនសរីរាង្គរួមគ្នា
- និង 3ករណី ទារកម្នាក់ស្លាប់ក្នុងពោះ សំរាប់គភីកូនភ្លោះ។

OBJECTIVES

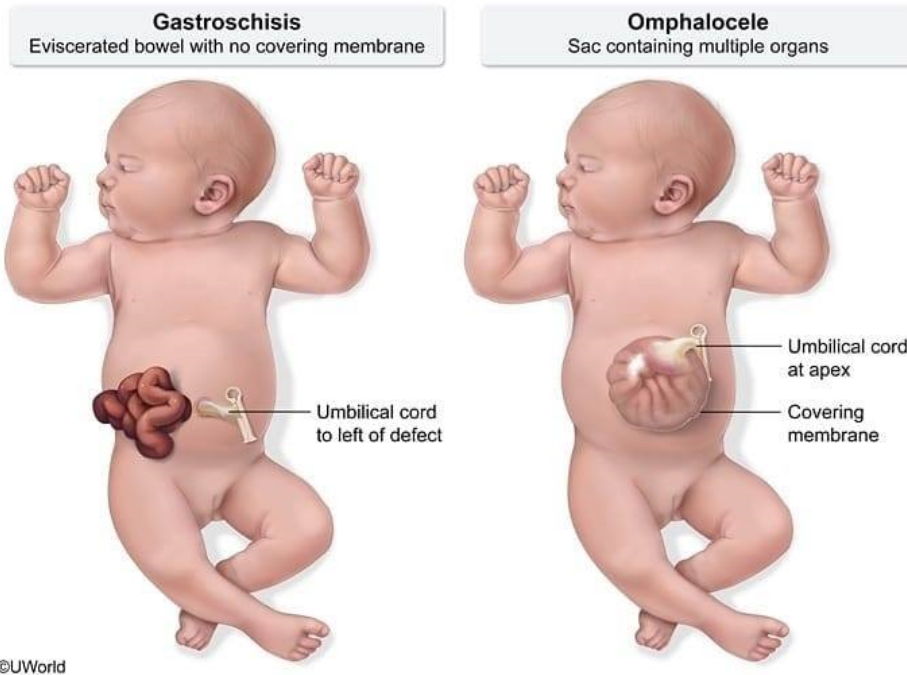
- How to do antenatal diagnosis of gastroschisis?
- What are our management with the foetus and with the parents?

INTRODUCTION

- Gastroschisis occurs **early during pregnancy**.
- The antenatal diagnosis → information to parents.
- 1 in 2000 live births.
- 1F:1M
- Chromosomal anomalies associated with gastroschisis are 10%, and familial occurrence is exceptionally rare.

Abdominal wall defects

Gastroschisis vs. omphalocele



Prenatal care and postnatal outcome for fetuses with laparoschisis

Tableau 1 Fréquence des malformations, des syndromes et des dyschromosomies associées aux laparoschisis en comparaison avec les données de Stoll et al., 2001, Barisic et al., 2001 et Poulain et al., 1994

Table 1 Proportion of concurrent malformations syndromes or chromosomal abnormalities in gastroschisis in comparaison with Stoll et al., 2001, Barisic et al., 2001 and Poulain et al., 1994

	CHR 1992-2003	Stoll et al., 2001 265 858 naissances	Barisic et al., 2001 690 123 grossesses	Poulain et al., 1994 764 NN + laparoschisis
<i>N Laparoschisis</i>	24	47	106	764
<i>Prévalence/ 10 000</i>		1,76	1,54	
<i>Formes isolées</i>	87,5 %	46,8 %	77 %	91,4 %
<i>Formes associées</i>	12,5 %	53,2 %	23 %	8,6 %
<i>Dyschromosomies</i>	0 %	2,1 %	2 %	0,6 %
		1 Transloc. déséquilibrée	1 TRI. 13 1 TRI. 21	2 TRI. 13 2 TRI. 18 1 MONOS. 22
<i>Malformations diverses</i>	8,5 % Cardiaque	46,8 % Gastro-int. SNC	14 %	
<i>Syndromes non chromosomiques</i>	4 % Sy. X Fra.	4,2 % Limb body wall complex Squlettal dysplas.	7 % Limb body Wall Complex Bandes amniotiques O.E.I.S. syndr. ?	Bandes amniotiques

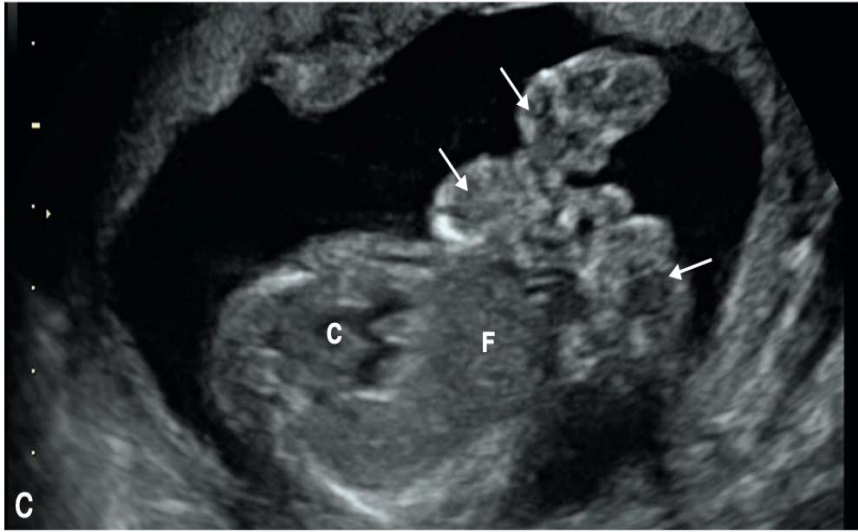
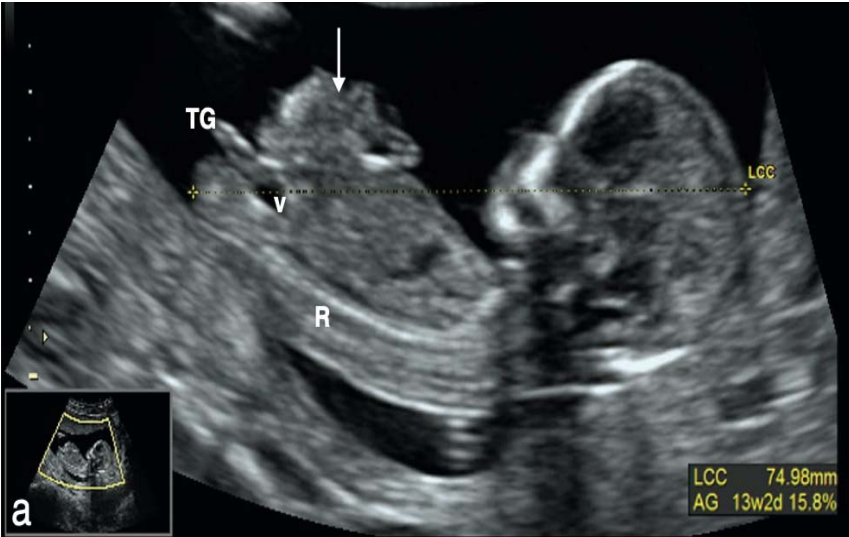
RISK FACTORS

- Younger mother < 20years
- Environment
- Medicine used during pregnancy (nitrosamine, aspirin, ibuprofen, pseudoephedrine,...)
- Alcohol, tobacco (smoked before or during early pregnancy)

How to diagnose the gastroschisis?

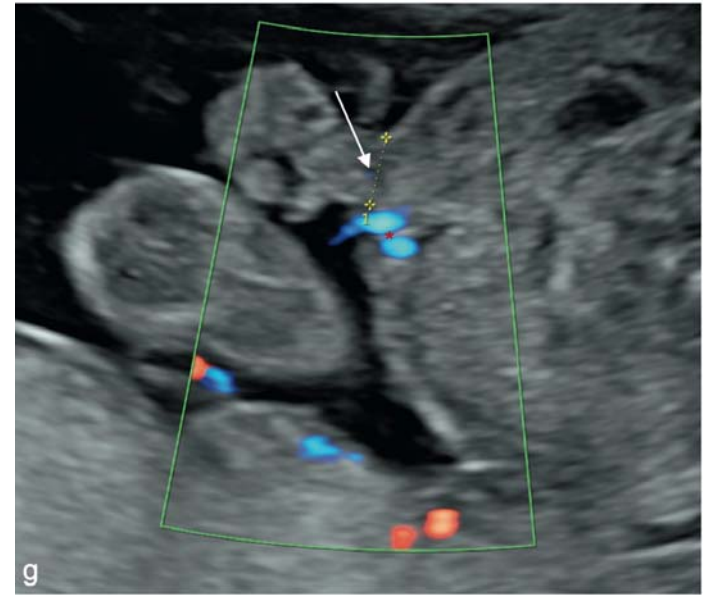
- Ultrasound between 18 and 20 weeks of pregnancy
- Blood screening: AFP increased at 18-22 weeks of gestation

First trimester



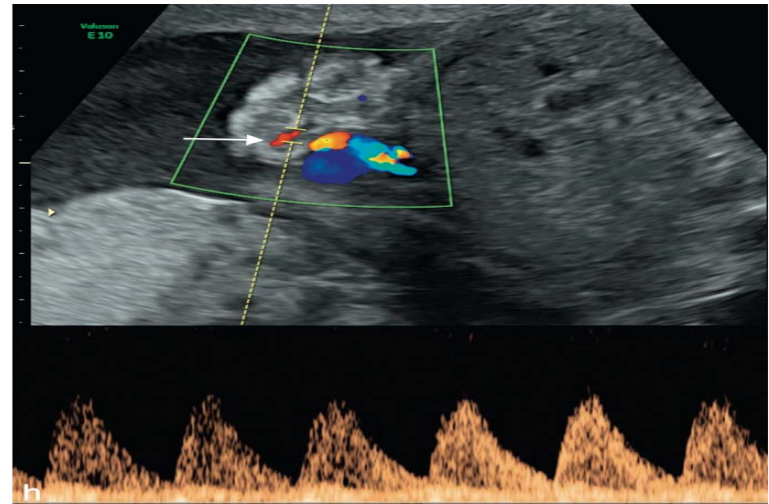
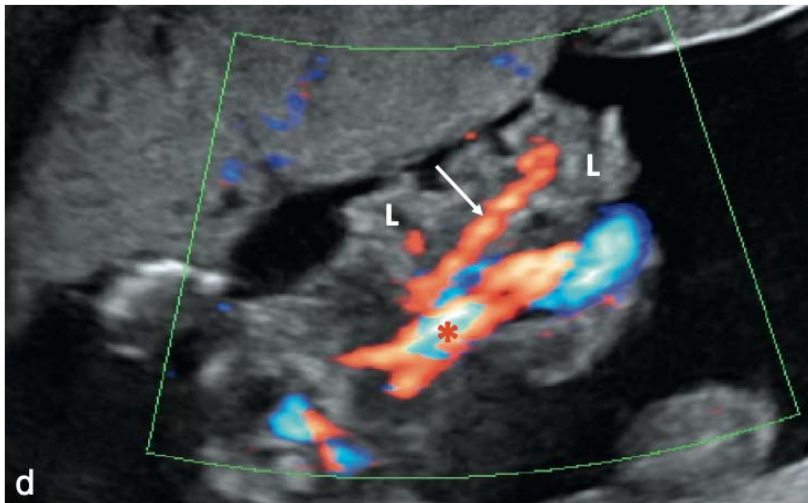
Abdominal wall defects

P . Bourgeot, B . Guérin, Y . Ardaens, M . Kohler, R . Favre



Abdominal wall defects

P . Bourgeot, B . Guérin, Y . Ardaens, M . Kohler, R . Favre



Abdominal wall defects

P . Bourgeot, B . Guérin, Y . Ardaens, M . Kohler, R . Favre

Rare left-sided gastroschisis with isolated omental herniation

Rachael Cannon ^{a,*}, Alexa Mitzner ^a, Jill Whitehouse ^b

^a Palms West Hospital, Neonatal Intensive Care Unit 13001 Southern Blvd Loxahatchee, FL, 33470, United States

^b Joe DiMaggio Children's Hospital Pediatric Surgery Department, 1005 Joe DiMaggio Drive, Hollywood, FL, 33021, United States

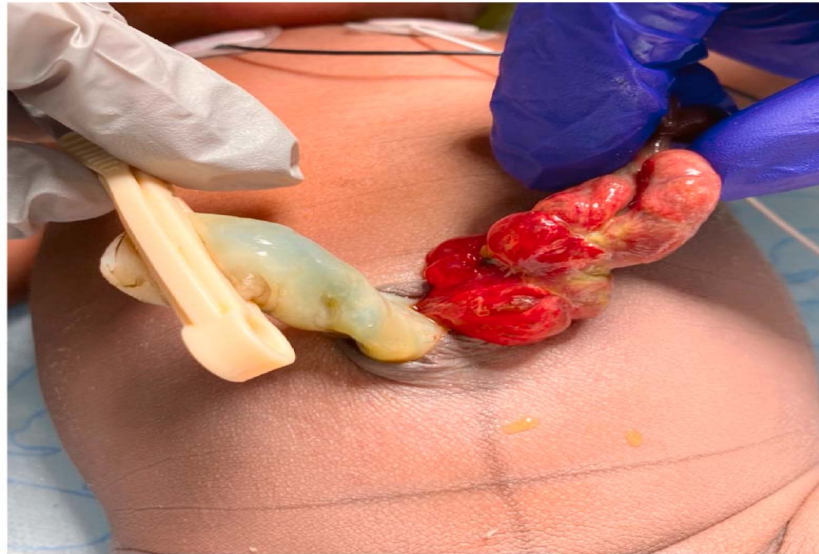


Fig. 1. Pre-operative abdominal wall, showing umbilical cord on the patient's right and herniated omentum on the patient's left.

ANTEPARTUM CARE

- Fetal surveillance:
 - **Ultrasound every 2 weeks** to evaluate fetal status, bowel thickening, dilatation, fluid and growth.
 - **Initiation of antepartum fetal monitoring with twice weekly NST/weekly AFI** at 33-34 weeks or sooner if other co-morbidities (for example IUGR) are noted.
 - **Multidisciplinary care meeting** to involve OB, MFM, Neonatology, Genetics and Pediatric Surgery.

ANTEPARTUM CARE

- Parental counseling:
 - The parental concerns are mainly focused on long-term post-natal outcomes including gastrointestinal function and neurodevelopment.

PRONOSIS

- The prognosis of infants with gastroschisis is primarily determined by the degree of bowel injury, which is difficult to assess antenatally.

Évolution de la grossesse et facteurs pronostiques

Tableau 2 Comparaison de l'évolution postnatale des cas de laparoschisis ayant présenté un oligohydramnios et les cas avec liquide amniotique normal en considérant au moins trois échographies à partir du diagnostic

Table 2 Comparison between postnatal outcome for gastroschisis cases with oligohydramnios and those with normal amniotic fluid index

	Oligoamnios (<i>n</i> = 9)	Liquide amniotique normal (<i>n</i> = 6)
Interventions	16 (1,8)	11 (1,8)
Délai < AET	70	28
Durée séjour	95	52
Enfants avec complications digestives	2 (0,2)	3 (0,5)

Délai < AET : délai en jours avant alimentation entérale totale.

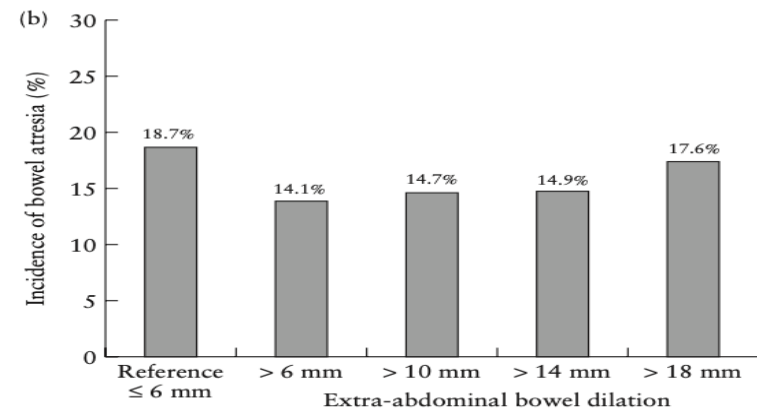
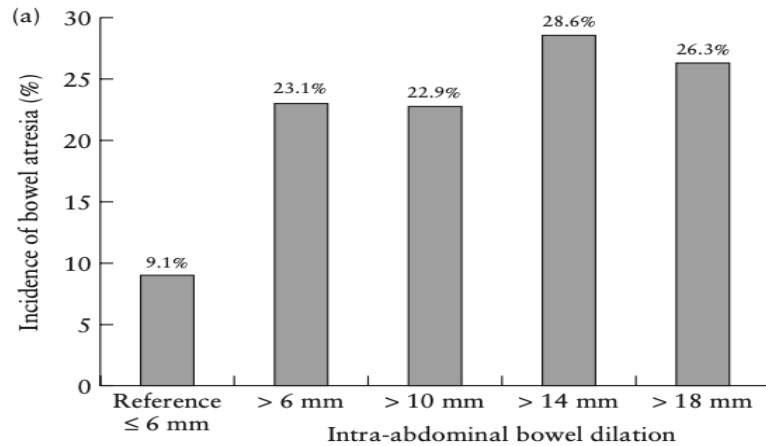
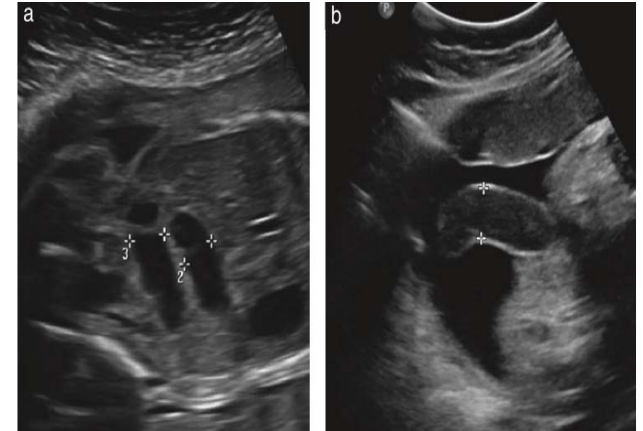
Prenatal care and postnatal outcome for fetuses with laparoschisis

Sonographic predictors of postnatal bowel atresia in fetal gastroschisis

K. R. GOETZINGER, M. G. TUULI, R. E. LONGMAN, K. M. HUSTER, A. O. ODIBO and A. G. CAHILL

Department of Obstetrics & Gynecology, Washington University School of Medicine, St Louis, MO, USA

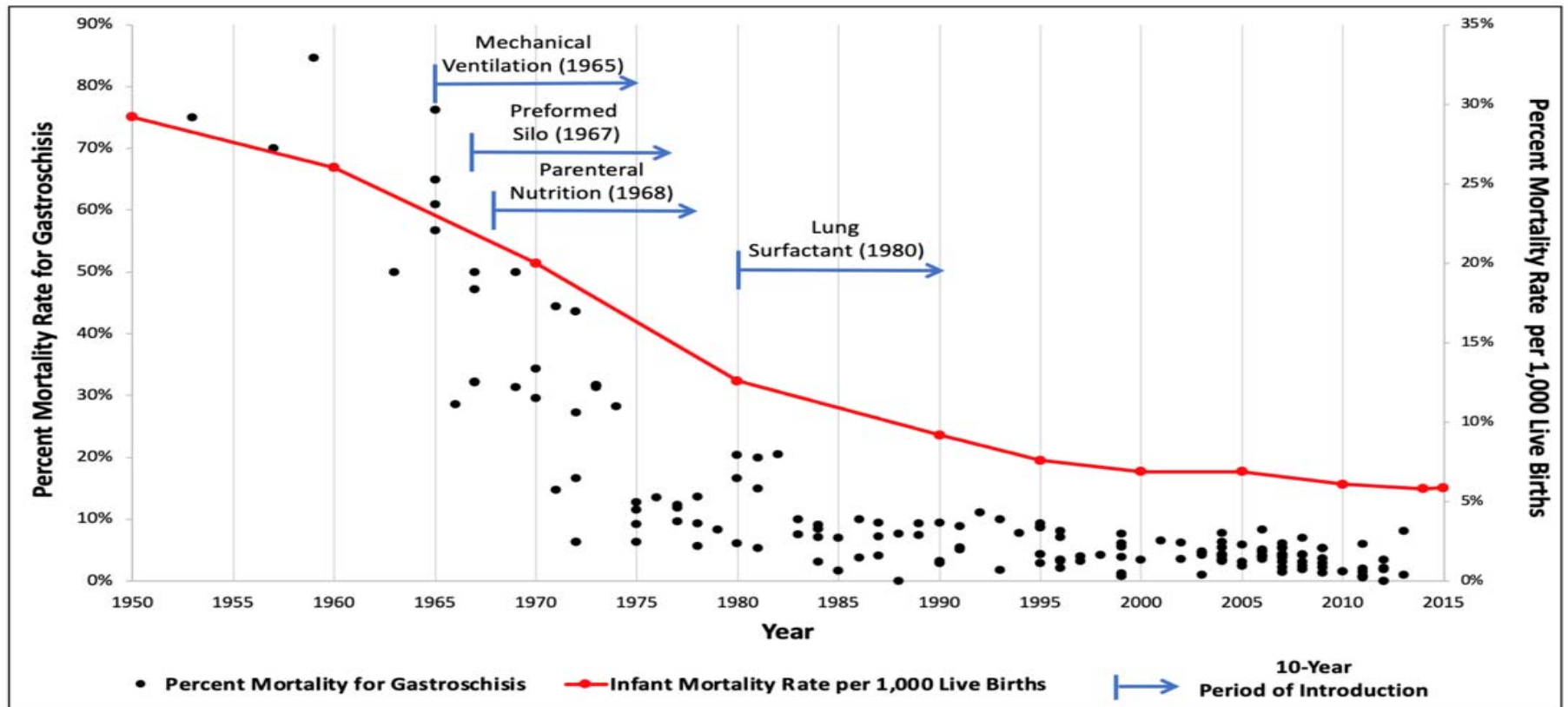
KEYWORDS: abdominal wall defect; bowel atresia; bowel dilation; bowel-wall thickening; gastroschisis



MANAGEMENT

- Delivery in a specialized center
- No contraindication to vaginal delivery
- The timing of delivery is based on gestational age (lung maturity), ultrasound findings (fetal growth profile, bowel appearance), and fetal testing results.
- Long umbilical cord (10cm) requested

Improved Mortality of Patients with Gastroschisis: A Historical Literature Review of Advances in Surgery and Critical Care from 1960–2015



Comparison of postnatal evolution according to the term of pregnancy

Postnatal outcome and term at birth

	Avant 35 semaines (<i>n</i> = 7)	Entre 35 et 37 semaines (<i>n</i>=10)	Après 37 semaines (<i>n</i> = 5)
Interventions	12 (1,7)	21 (2,3)	7(1,4)
Délai < AET	74	55	32
Durée séjour	87	77	38

Published in : Journal de Gynécologie, Obstétrique et Biologie de la Reproduction (2007), vol. 36, iss. 5, pp 486-95 Status : Postprint (Author's version)

Case 1

- Ms. LSN, 33yrs, 5 gestations, 4 parities: pre-natal consultation for gastroschisis on US at 33 GW(done in private clinic) , then admitted.
- US at NMCHC confirmed antenatal diagnosis of gastroschisis, left heart hypoplasia and polyhydramios.
- After detail explaint to parents, they decided to terminate the pregnancy.
- Induced labor was performed



Take home messages

- Differentiate between gastroschisis and omphalocele
- US is the image of choice for diagnosis and monitoring the foetus (find for possible complications and associated malformations)
- Fetal prognosis depend on term of pregnancy and associated complications and pathologies
- Transfer immediately to NICU
- Multi-disciplinary approach is mandatory

REFERENCES

1. Ali Nawaz Khan, Medscape, Laparoschisis, updated: Feb 03, 2022
2. <https://www.sciencedirect.com/science/article/abs/pii/S163740880779661>
3. <https://pubmed.ncbi.nlm.nih.gov/27568409/>
4. <https://www.em-consulte.com/article/159943/disparition-prenatale-spontanee-dun-laparoschisis->
5. https://www.orpha.net/consor/cgi-bin/OC_Exp.php?Lng=FR&Expert=2368
6. http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S2462-85222018000100010
7. <https://www.mottchildren.org/conditions-treatments/peds-fetal-medicine/gastroschisis>

THANKS FOR YOUR ATTENTION