Antenatal diagnosis and management of laparoschisis

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

Prenatal diagnosis (DAN) ប្រព័ន្ធរង្វាន់កុមារ ស្រូវេ:\ ឆ្នាំ 2023 កនុងការប្រការពីកុមាររំនៀស

- ការពិភាគការចែករំលែកូលជីវិតនៃកុមារ និងបន្ថែមការកាត់ដំណើរការកូលជីវិត ដើម្បីការចែករំលែកូលជីវិតដោយការប្រការពីកុមាររំនៀស
- ការពិភាគការចែករំលែកូលជីវិតនៃកុមារ និងបន្ថែមការការចែករំលែកូលជីវិតដោយការប្រការពីកុមាររំនៀស

01/08/2023
ប្រធានាធិបតីអក្រុង: សហវុ សម្រាប់ ឆ្នាំ 2023 សុទ្ធតែប្រការិយាបញ្ជីថ្មីដោយប្រព័ន្ធការប្រឈម 36ករណី ដើម្បីការដំបូង៖

• 14ករណី ការប្រការបញ្ជាក់ខោក់ ឬការដំបូង រឹង តាម ដែន
• 9ករណី ការប្រការិយាបញ្ជីក្នុងក្រុម
• 6ករណី ការប្រការិយាបញ្ជីក្នុងដំណើរការ ៖ រឹង ឬឆ្លងកាត់
• 4ករណី ការប្រការិយាបញ្ជីក្នុងក្រុម ឬស្រមោក
• 3ករណី ការប្រការិយាបញ្ជីក្នុងដំណើរការ ៖ សារធាតុក្នុងព្រៃ
OBJECTIVES

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

• Gastrochisis occurs early during pregnancy.
• The antenatal diagnosis information to parents.
• 1 in 2000 live births.
• 1F:1M
• Chromosomal anomalies associated with gastrochisis are 10%, and familial occurrence is exceptionally rare.
Abdominal wall defects

Gastrochisis vs. omphalocele

Gastrochisis
Eviscerated bowel with no covering membrane

Omphalocele
Sac containing multiple organs

Umbilical cord to left of defect

Umbilical cord at apex

Covering membrane
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 gastrochisis in comparison with Stoll et al., 2001, Barisic et al., 2001 and Poulain et al., 1994

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>N Laparoschisis</td>
<td>24</td>
<td>47</td>
<td>106</td>
<td>764</td>
</tr>
<tr>
<td>Prévalence/ 10 000</td>
<td></td>
<td>1,76</td>
<td>1,54</td>
<td></td>
</tr>
<tr>
<td>Formes isolées</td>
<td>87,5 %</td>
<td>46,8 %</td>
<td>77 %</td>
<td>91,4 %</td>
</tr>
<tr>
<td>Formes associées</td>
<td>12,5 %</td>
<td>53,2 %</td>
<td>23 %</td>
<td>8,6 %</td>
</tr>
<tr>
<td>Dyschromosomies</td>
<td>0 %</td>
<td>2,1 %</td>
<td>2 %</td>
<td>0,6 %</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 Transloc. déséquilibrée</td>
<td>1 TRI. 13</td>
<td>2 TRI. 13</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 TRI. 21</td>
<td>2 TRI. 18</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 MONOS. 22</td>
</tr>
<tr>
<td>Malformations diverses</td>
<td>8,5 % Cardiaque</td>
<td>46,8 % Gastro-int. SNC</td>
<td>14 %</td>
<td></td>
</tr>
<tr>
<td>Syndromes non chromosomiques</td>
<td>4 % Sy. X Fra.</td>
<td>4,2 % Limb body wall complex Squettal dysplas.</td>
<td>7 % Limb body Wall Complex Bandes amniotiques</td>
<td>Bandes amniotiques O.E.I.S. syndr.?</td>
</tr>
</tbody>
</table>
RISK FACTORS

• Younger mother < 20 years
• 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
Abdominal wall defects

P. Bourgeot, B. Guérin, Y. Ardaens, M. Kohler, R. Favre
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Rare left-sided gastroschisis with isolated omental herniation

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Fig. 1. Pre-operative abdominal wall, showing umbilical cord on the patient's right and herniatedomentum 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 oligohydrâmnios et les cas avec liquide amniotique normal en considérant au moins trois échographies à partir du diagnostic

<table>
<thead>
<tr>
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<th>Oligoamnios (n = 9)</th>
<th>Liquide amniotique normal (n = 6)</th>
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<tbody>
<tr>
<td>Interventions</td>
<td>16 (1,8)</td>
<td>11 (1,8)</td>
</tr>
<tr>
<td>Délai &lt; AET</td>
<td>70</td>
<td>28</td>
</tr>
<tr>
<td>Durée séjour</td>
<td>95</td>
<td>52</td>
</tr>
<tr>
<td>Enfants avec complications digestives</td>
<td>2 (0,2)</td>
<td>3 (0,5)</td>
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Délai < AET: délai en jours avant alimentation entérale totale.

Prenatal care and postnatal outcome for fetuses with laparoschisis

doi:10.1016/j.jgyn.2006.10.007
Sonographic predictors of postnatal bowel atresia in fetal gastroschisis


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

Children 2022, 9, 1504. https://doi.org/10.3390/children9101504
Comparison of postnatal evolution according to the term of pregnancy

Postnatal outcome and term at birth

<table>
<thead>
<tr>
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<th>Avant 35 semaines (n = 7)</th>
<th>Entre 35 et 37 semaines (n=10)</th>
<th>Après 37 semaines (n = 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interventions</td>
<td>12 (1,7)</td>
<td>21 (2,3)</td>
<td>7(1,4)</td>
</tr>
<tr>
<td>Délai &lt; AET</td>
<td>74</td>
<td>55</td>
<td>32</td>
</tr>
<tr>
<td>Durée séjour</td>
<td>87</td>
<td>77</td>
<td>38</td>
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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 imagine 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
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THANKS FOR YOUR ATTENTION