UPDATE ON FETAL ENDOCOPY

Eduard Gratacós
Hospital Clínic
Universidad de Barcelona
www.medicinafetalbarcelona.org
Fetal Medicine & Therapy

- recent development
- high tech
- multidisciplinarity
- fetal surgery
- referral activity
- increasing importance
- high legal pressure
Evolution of social demands in Fetal Medicine & Therapy: the fetus as a patient

perception fetus as a person

capacity Dx & Tx

society of information

↑ DEMANDS
## Levels in Fetal Medicine

How should fetal medicine be integrated in public health

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diagnosis</td>
<td>Primary level</td>
</tr>
<tr>
<td>Advanced studies</td>
<td>US-guided fetal therapy</td>
<td>Tertiary Hospital (1 in 300,000)</td>
</tr>
<tr>
<td>3</td>
<td>Endoscopic therapy &amp; Fetal Surgery</td>
<td>Fetal surgery Center (1 in 15-20 million)</td>
</tr>
</tbody>
</table>
FETAL SURGERY = FETOSCOPY

• fetus ≠ smaller neonate

• uterus and mother not operable
FETAL THERAPY: INSTRUMENTATION
FETAL THERAPY

common indications

- Monochorionic Twins
- CDH and Pulmonary Masses
- Others: urinary obstruction, tumors
common indications

• Monochorionic Twins
• CDH and Pulmonary Masses
• Others: urinary obstruction, tumors
TWIN PREGNANCY

4/5 DC twins

1/5 MC twins

- Dizygotic
- Mono (early split)

Independent placenta

Isolated systems

IUGR

Malformation

IUGR

TTS

MC: neurologic morbidity x4-5

Monozygotic (late split)

Shared placenta

Vascular-connected systems

© Fetal Medicine Barcelona
PROBLEM 1:
Unbalanced Transfusion
TTS (10 %)

PROBLEM 2:
Placental Discordance
sIUGR (10 %)
monochorionic pregnancy
‘Rationale’ of TTS

DONOR

Chronic unbalanced transfusion

oliguria
oligohydramnios
stuck twin

SEVERITY

RECIPIENT

polyuria
polyhydramnios
hydrops
Diagnostic criteria severe TTTS (Eurofoetus)
Deprest J & Gratacós E. Curr Opin Obstet Gynecol 1999

POLYHYDRAMNIOS + ENLARGER BLADDER
(>8 cm <20w - >10 cm <26w)

OLIGOANHYDRAMNIOS + COLLAPSED BLADDER
(<2 cm)
Stuck Twin
Eurofoetus RCT on therapy for TTS
Laser vs. amniodrainage
NEJM 2004

- n=144 (72 per arm)
- Survival at least 1: 81% vs. 55%
- No survivors: 19% vs. 40%
- Neurological morbidity: 8% vs 20%
Laser in TTS: 15 to 28 weeks
TTTS: laser therapy of placental anastomoses
Leuven - Barcelona

One year sequelae (n=78): 8.4% (all delivered <30 w)

• Jun-10 n=510

At least one 89%
FETAL THERAPY

common indications

- Monochorionic Twins
- CDH and Pulmonary Masses
- Others: urinary obstruction, tumors
Fetal Therapy for HDC

**FETO**

Percutaneous Feto-Endoscopic Tracheal Occlusion

Deprest J, Gratacos E, Nicolaides K. UOG 04

- increase airways pressure
- accelerated growth
- first case: oct 01
- commonly >180
LUNG DEFECTS
CCAM: prognosis & natural history

CCAM & hydrops

MORTALITY 100%

(Winteres et al. JCU 1997)
(Kitano et al. W.B. Saunders, 1999)

MAIN FACTOR: SIZE

Maternal mirror syndrome (placental hídrops)
LUNG DEFECTS

Lung Mass + hydrops = fetal therapy
LUNG DEFECTS

Pleural effusion + hydrops = fetal therapy

Nicolaides K, 1990
Smith RP, UOG 05
Murabayashi, Fet Dx Ther06
LUNG DEFECTS

Bronchial atresia
FETAL THERAPY

common indications

• Monochorionic Twins
• CDH and Pulmonary Masses
• Others: urinary obstruction, tumors
LUTO
técnicas de descompresión vesical

INDICACIÓN:
-feto varón
-megavejiga y “key sign”
-anhidramnios

Fetal cystoscopy: Valve Ablation

• several successful attempts reported
• theoretically allows physiological bladder function
• access to urethra challenging
• need for experience

Quintero RA: AJOG 95, Lancet 95, AJOG 00
LUTO

Early forms

- Onset 15w
- Evolution to oligoanhydramnios
- rapid progression renal dysplasia

- Impossible rule out more complex problems
- “Easy” access to urethra
- May offer treatment and see evolution with option of TOP
LUTO
Late forms

- Onset > 20w
- Progressive oligohydramnios
- Hydrome nephrosis

- Allows better planning
- Easier rule out associated anomalies
- Best results
- Very difficult access to urethra
LUTO
Obstructive ureterocele
Cirugía fetal en espina bífida
Deambulación 20% vs 40% en tratados
Necesidad shunt 35% a 85%
Complicaciones materno-fetales > 50%
UPDATE ON FETAL ENDOSCOPY

Eduard Gratacós
Hospital Clínic
Universidad de Barcelona
www.medicinafetalbarcelona.org

© Fetal Medicine Barcelona