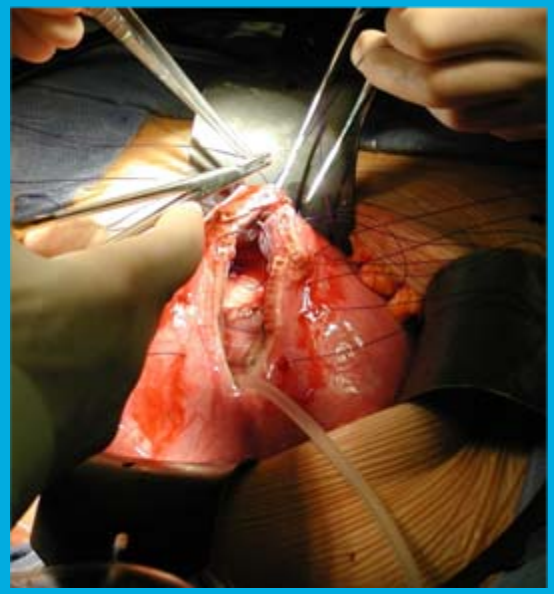
Belgium

Spina bifida repair: another center in Belgium?



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UNIVERSITY HOSPITALS LEUVEN

Belgium

Brussels
Capital Europe

Spina bifida in Belgium post-MOMS?

1. Is there a need ?
   a. Role of tertiairy centers in the perinatal care of spina bifida centers
   b. Prenatal diagnosis and patient decisions in Belgium
   c. Position of our center: portfolio & numbers
2. Setting up a program - internal stake holders
   a. Pediatric neurology
   b. Neonatalogy
   c. Fetal & anesthesia team
   d. Why (not) an endoscopic approach (yet) ?
3. Setting up a program – external stake holders
   a. Referrals
   b. On site training
   c. Skill retention

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S1: prenatal diagnosis, counselling and management in Belgium

S4: Fetal surgery in Leuven

S6: Fetoscopic repair (L Joyeux)

S3: Referrals for suspected spina bifida in Belgium

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Perinatal Management

- 3 tertiary centers (Gent, Brussels, Leuven) for lifelong care of the spina bifida patient
  - Multidisciplinary management
    - Pediatric & Adult Neurologist
    - Neurosurgeon
    - Orthopedic surgeon
    - Urologist
    - Large paramedical team
- Aims at centralization
  - Financial stimulus
- TOP is legal

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Numbers

	Belgium	Flanders
Deliveries	127,000 (current)	68,000 (current)
NTD @ 8-9/10,0000	9 – 11 p.a.*	4-6
Prenatal diagnoses	(83%)*	83%*
Patient decisions: TOP	(89%)*	89%*

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* Boyd, 2004: 23/3 yrs

Spina bifida in Europe

Country	prenatal diagnosis (% of total)	GA at diagnosis	TOP (% of prenatally diagnosed)
Belgium	83%	16	89%
Croatia	80%	12	100%
Denmark	89%	16	88%
England Wales	94%	17	92%
France	94%	14	98%
Germany	90%	18	44%
Italy	87%	18	94%
Switzerland	83%	13	100%
Ireland	56%	22	0%***
Malta	25%	19	0%***
Spain	94%	16	98%
Netherlands	78%	31	29%
Total	88%	17	88%

Detection rate 80-94% ***(Boyd, Eurocat, BJOG2008)***

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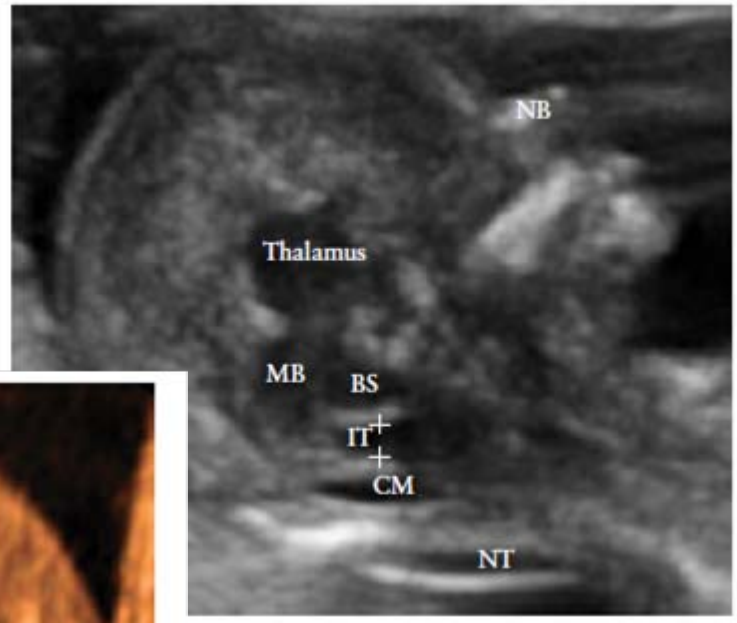
Detection rate 80-94% - termination rates variable (Boyd, Eurocat, BJOG2008)

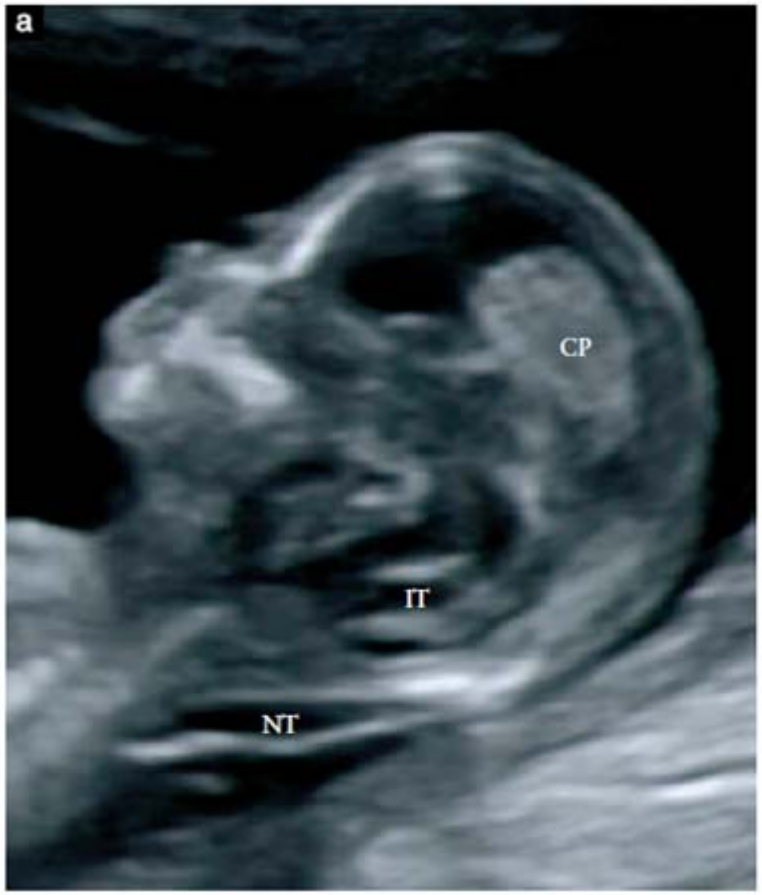
Prenatal screening (1st trimester)

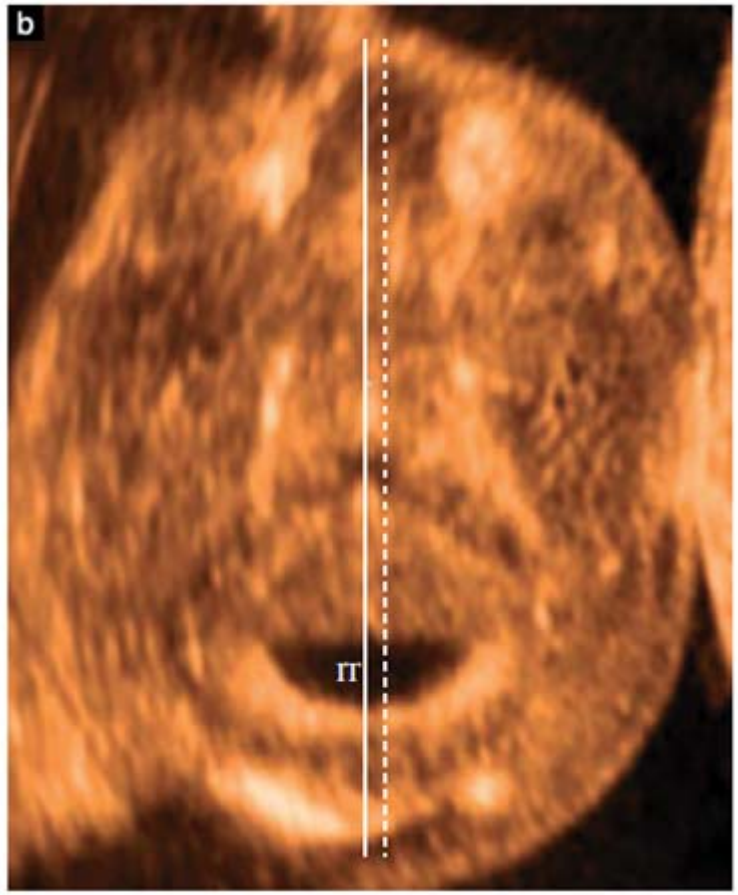
From nuchal translucency to intracranial translucency: towards the early detection of spina bifida

R. CHAOUI†*and K. H. NICOLAIDES‡

Ultrasound Obstet Gynecol 2010; 35: 133–138







Numbers in the wider area

Ovaere et al, Fet Diagn Ther 2014

- **2006-2013: review 2 tertiairy centers Rotterdam-Leuven (8 years)**
- **167 (20/yr) women with NTD @ 19 wks**

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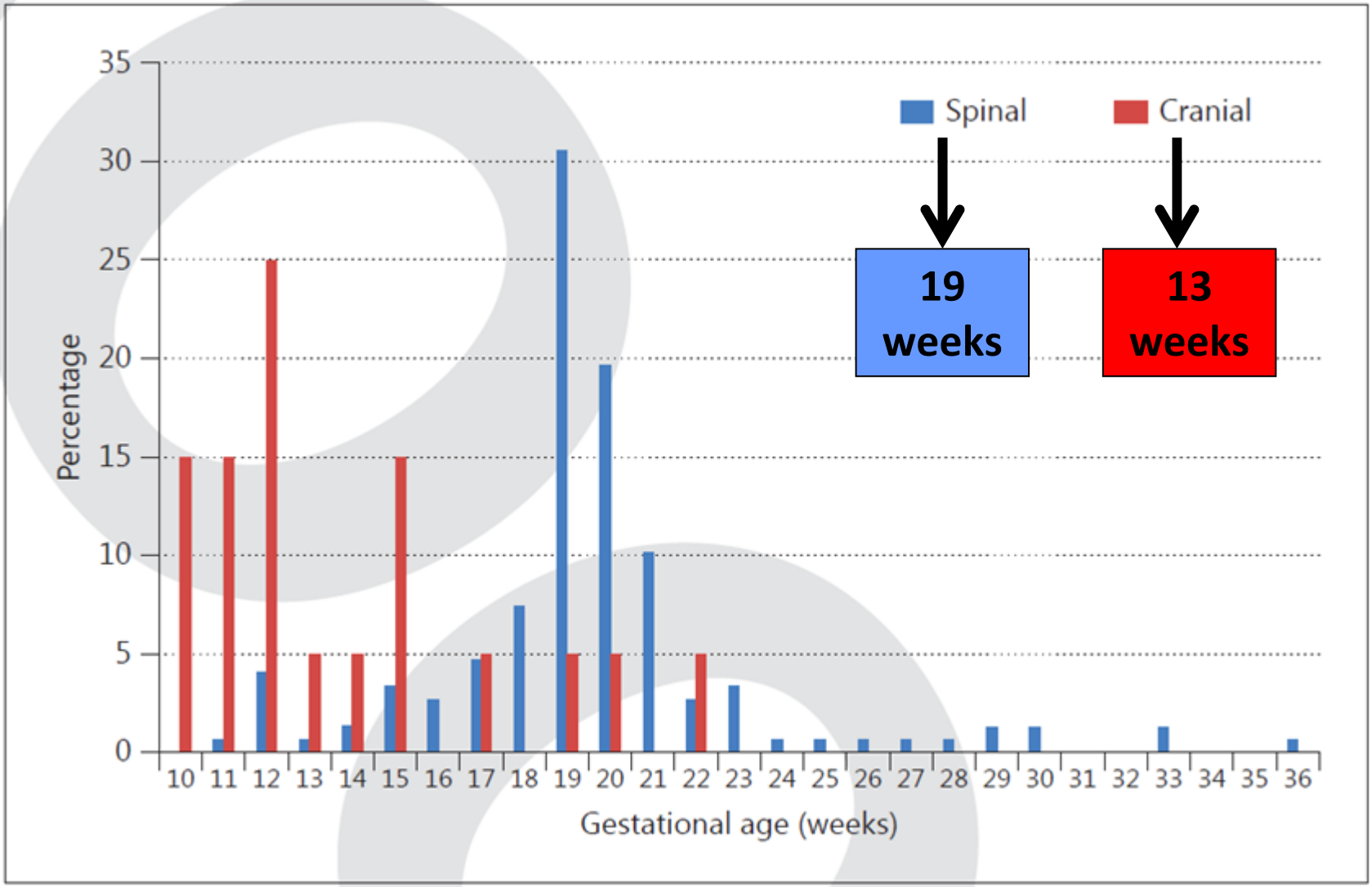
Recent Review Belgium & Netherlands

Gestational age at evaluation *(Ovaere, et al. Fet Diagn Ther 2014)*



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N= 167 evaluations for suspected NTD (2006-2013; Rotterdam & Leuven)

Spinal lesions

	Aperta (n = 141)	Occulta (n = 6)	p value
Gestational age at initial diagnosis, weeks	19 (11–36)	19 (17–23)	
Nonisolated NTD	32 (23%)	2 (33%)	
Structural or genetic defects			
Cardiovascular	1		
Trisomy/triploidy	3		
Body stalk anomaly	3		
Urinary tract	4		
Diaphragmatic hernia	1		
Unrelated brain anomalies	4	1	
Abdominal wall	2		
Cheilo-gnatho-palatoschisis	1		
Nonstructural anomalies (IUGR, oligoanhydramnios)	3		
Isolated NTD	109 (77%)		
Upper level of the defect[1]			
≥L3	57%	0%	0.015
L4–L5	33%	50%	
≤S1	10%	50%	
Vertebrae, n	5 (2–18)	3 (1–7)	
Hydrocephalus	72%	0%	0.0077
ACM	95%	0%	<0.0001
In utero management			0.0005
TOP	76%	0%	
Expectant	22%	100%	
Fetal Surgery	1%	n.a.	
Unknown	1%	0%	

13 p.a.

10-11 p.a.

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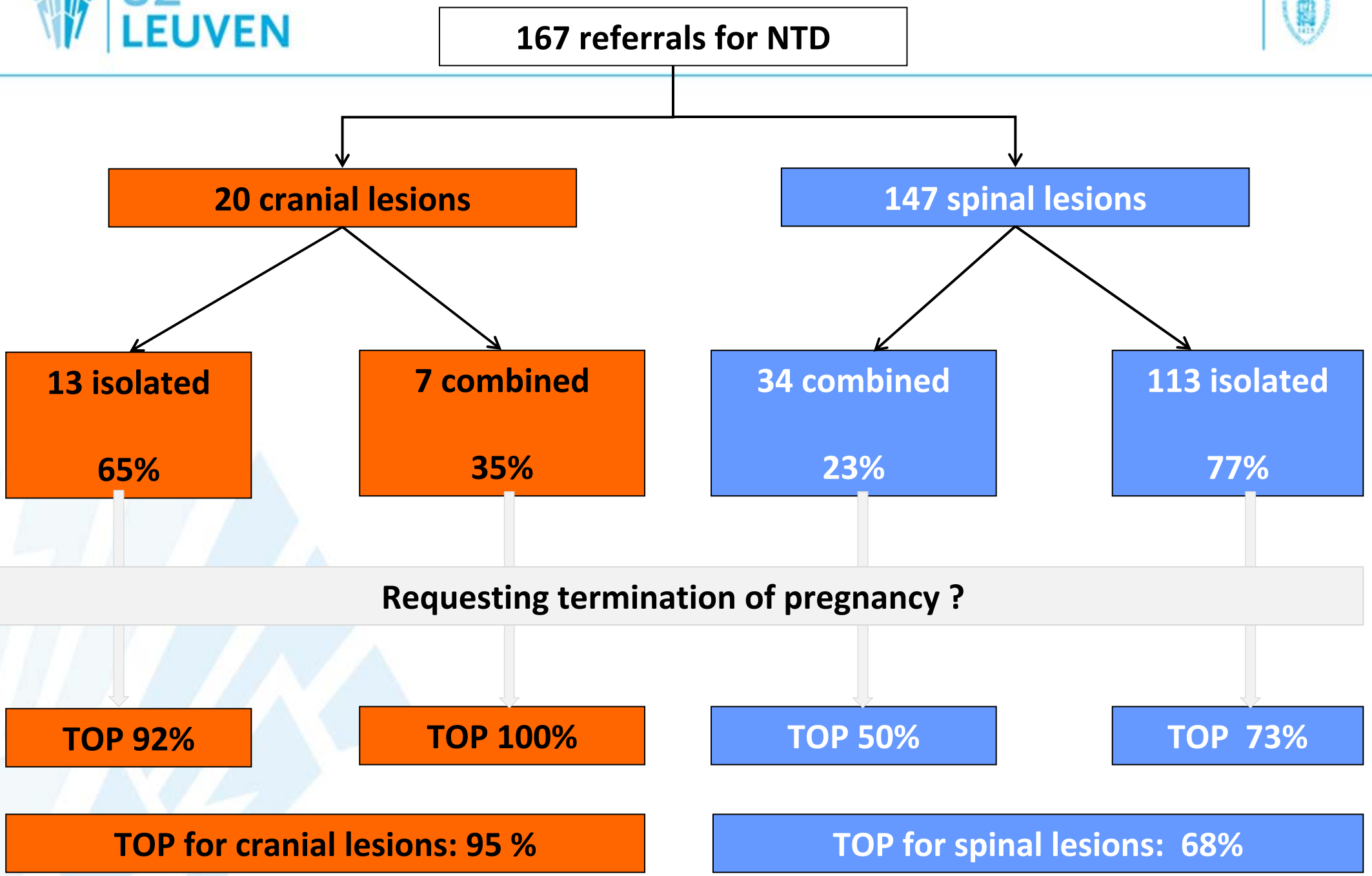

Ovaere, Eggink & Deprest, Fet Diagn Ther 2014

The fetal team wondered …

10-11 p.a. becomes 3-4 p.a.

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The Fetal Medicine Team Leuven

Leuven as fetal surgery center

- Certain diagnosis
- Predictable natural history
- Treatment cannot wait
- Experimental basis therapy required

International Fetal Medicine and Surgery Society - 1991

Obstetrical Endoscopy

- Placental surgery in monochorionic twins:
  - Twin to Twin Transfusion Syndrome
  - Discordant anomalies
- Umbilical Cord occlusion
- Amniotic Band Syndrome

Fetal Surgery

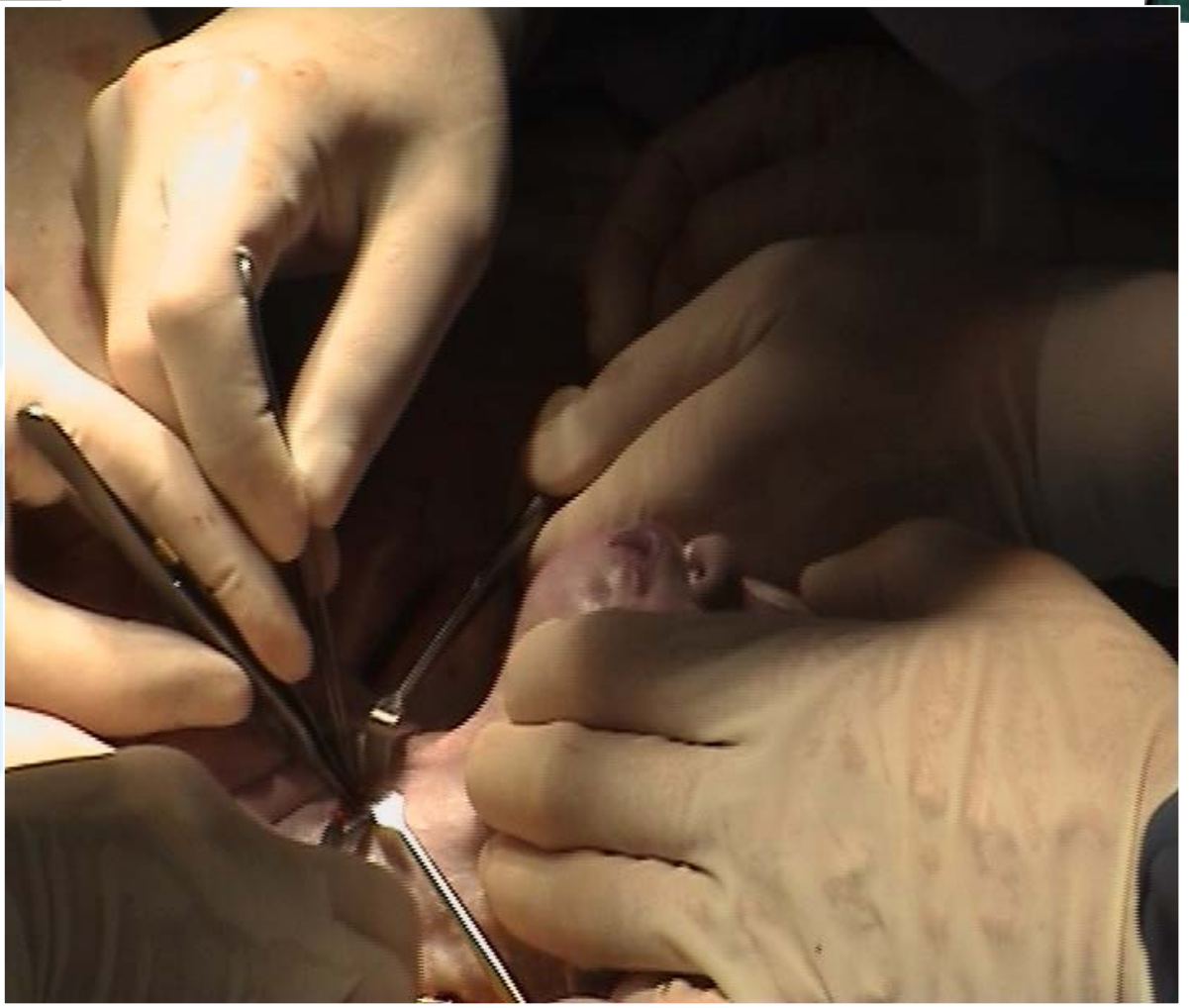
Lethal conditions:

- Operations on Placental Support
- Congenital Diaphragmatic Hernia
- Sacrococcygeal teratoma
- Lung Masses
- Cardiac anomalies

Non-lethal conditions

- Myelomeningocele (spina bifida) ?

EXIT



Oepkes & Deprest, UOG 2003

Chaos Syndrome

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