Case Report

Cesarean Section of a Woman with Omphalopagos Gemini

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The Problem

Our Case

- Primipara in 30th week of gestation
- Conjoined twins of omphalopagos type
- Tissue bridge of 3 cm diameter
- Conjoined viscera: liver
- Otherwise normal pregnancy

The Problem

Eng and Chang Bunker
the Original Siamese Twins

The Problem

- Conceived in 1 : 40’000 pregnancies
- Many abort or are terminated
- Nearly all are stillborn or die within 24 hours of birth
- Live births occur around 1 in every 200,000 of all live births.
- 5 unseparated sets of teenage or adult twins living today.
- 4-5 sets of conjoined babies at any time, awaiting separation or who are not separable (and will die usually within 18 months of birth)
- There are app. 50 complete sets of separated twins alive today or single survivor twins after separation.

Aetiology

- Conjoined twins originate from one fertilised egg
- They are identical, usually female, and share one placenta
- There are two theories about what happens in the womb:
  - The fertilised egg, which should have split into the embryos of identical twins, does not split properly.
  - Identical twin embryos start to develop separately, and fuse together later on in pregnancy.

Detection

- Routine ante-natal ultrasound scanning
- Conjoined twins have been detected as early as 9 weeks' gestation
- Diagnosis in the third trimester of pregnancy is more reliable
- Some types (e.g. cephalopagos) are harder to distinguish on sonograms than others.

Types

- Classification tends to depend on the point at which the twins are joined, the Greek suffix, '**pagos**' meaning 'that which is fixed'
- 6 basic classifications
- Over 30 separate types have been identified.

Omphalopagos / Thoracopagos

- Omphalopagos = joined at the abdomen
- Thoracopagos = joined at the thorax (sometimes also with a shared heart
- The majority — around 40% — are joined in this way. When the heart is not involved, as with Chang and Eng, separation prospects are good.
- Twins with joined hearts have a very poor prognosis for survival
- The Lewis twins survived unseparated with conjoined hearts until the age of six.

To separate or not?

- Decision based on ultrasound, MRI and 3D graphics to check:
  - the whereabouts and extent of the join,
  - whether any internal organs are involved.
- The experience of the medical team
- If separation seems feasible, its effects on both twins must be weighed up:
- What are the chances of one or both surviving surgery?
- What quality of life is likely for one or both twins after surgery?
- How does this compare with the probable quality of life if the twins remain joined?

If yes, when to separate?

- In the past, surgery at 6-12 months
- Better chance to stretch the skin in preparation for the operation.
- Actually there is a move towards earlier separation.
- Immediate separation is needed when one twin is stillborn, or is in such a poor state that the health of the other is threatened.
- Separation whilst twins are still too young to realise that they are joined is thought to help their psychological recovery.

Back to our case

Our Case

- 4 weeks till planned caesarean section
- Parturient hospitalized and under CTG surveillance
- Prepared plans for measures if emergency C.S. necessary

Scenarios

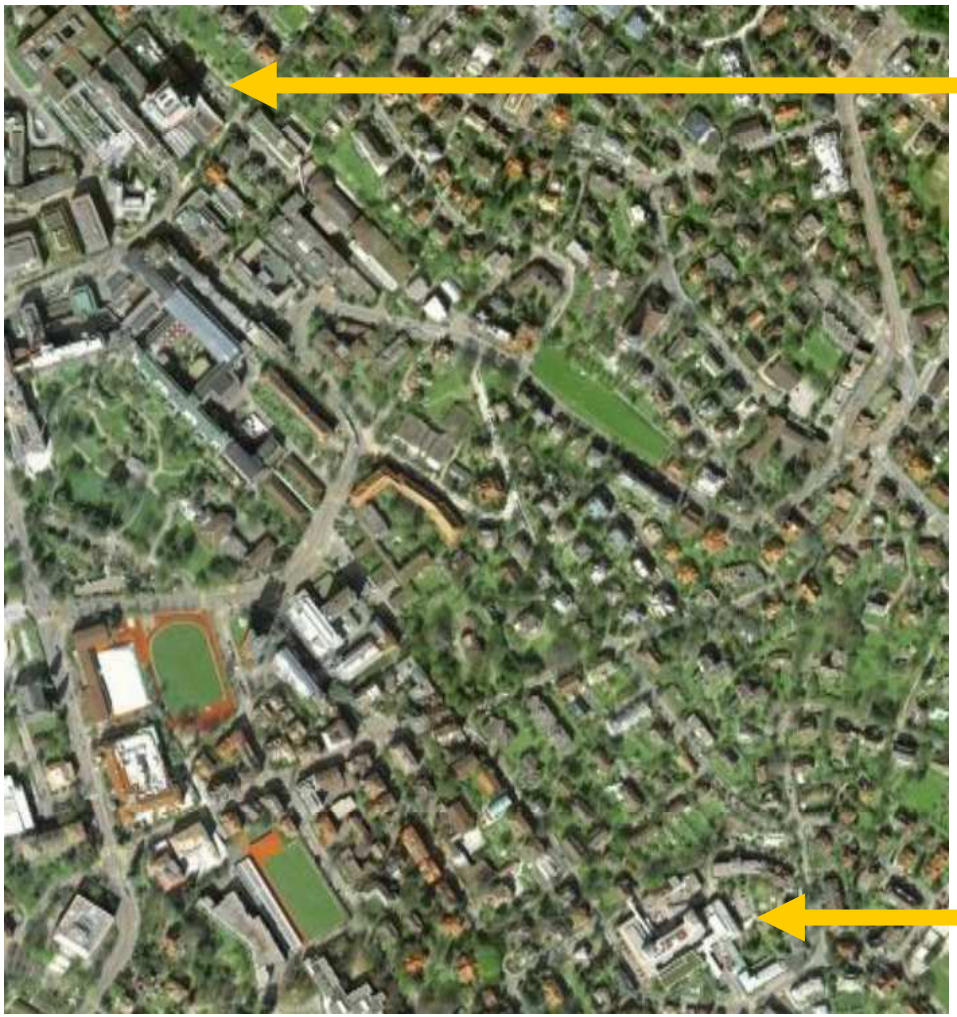
Elective C. section:

Venue: Kispi
Obstetrician (+ team) + Anesthetist from USZ
Pediatric surgeon (team) + Anesthetist
+ Neonatologists from Kispi

Emegency C. section

Venue: USZ
Obstetrician (+ team) + Anesthetist
+ Neonatologist from USZ

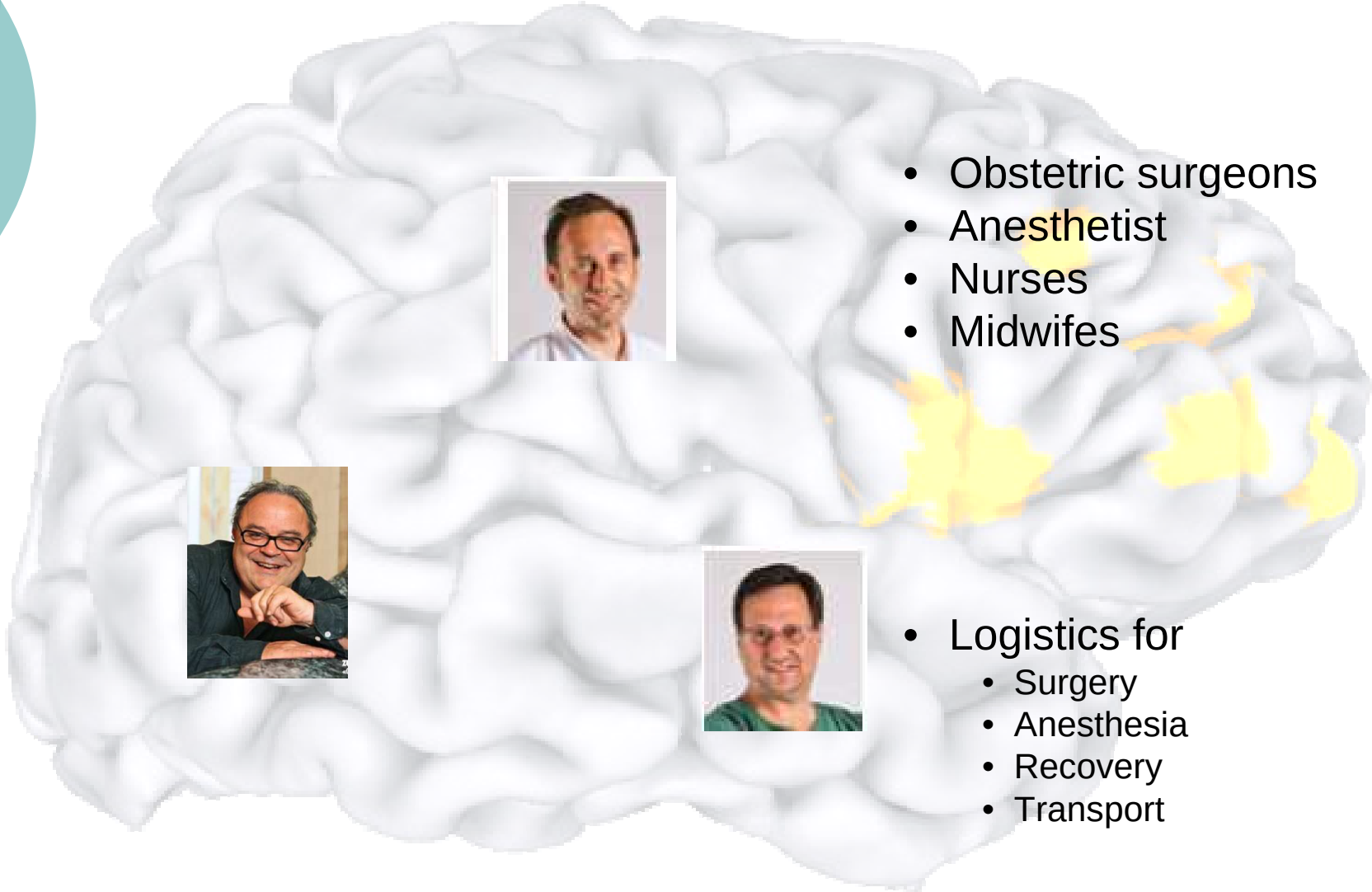
Locations



Obstetrics, Neonatology

Pediatric surgery,
Neonatology

A few very smart people made...



- Obstetric surgeons
- Anesthetist
- Nurses
- Midwifes

- Logistics for
  - Surgery
  - Anesthesia
  - Recovery
  - Transport

...a plan

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Anesthesia

- Upon request of surgeons: no spinal anesthesia

- General anesthesia
- RSI
- Thiopentone, Succinylcholine, Isoflurane

Unpleasant surprise on D -10

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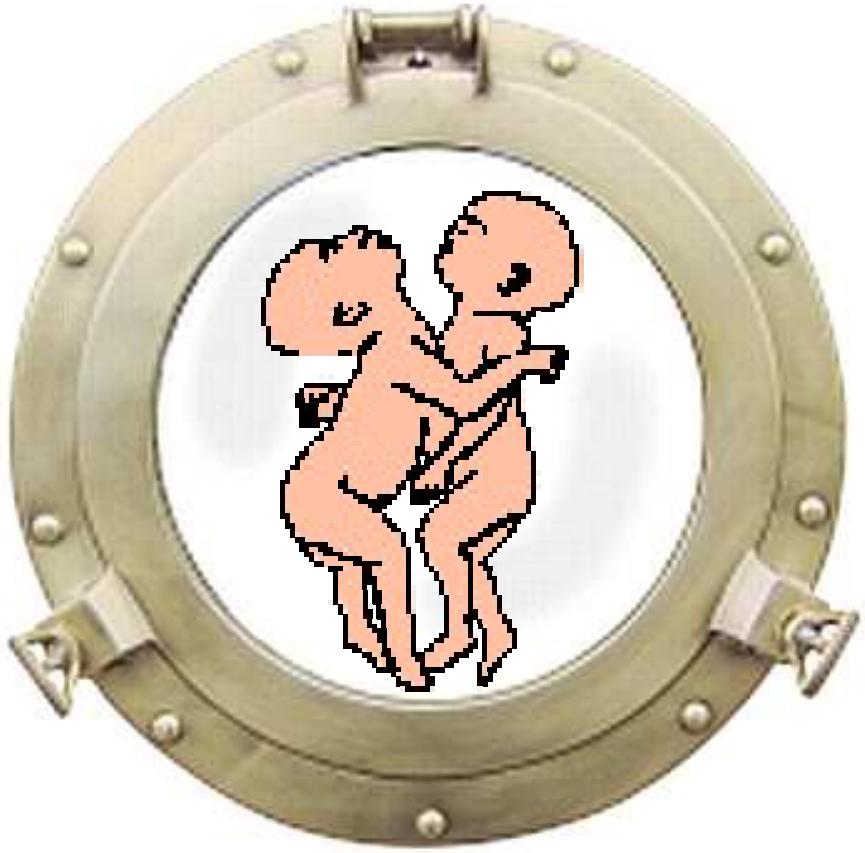

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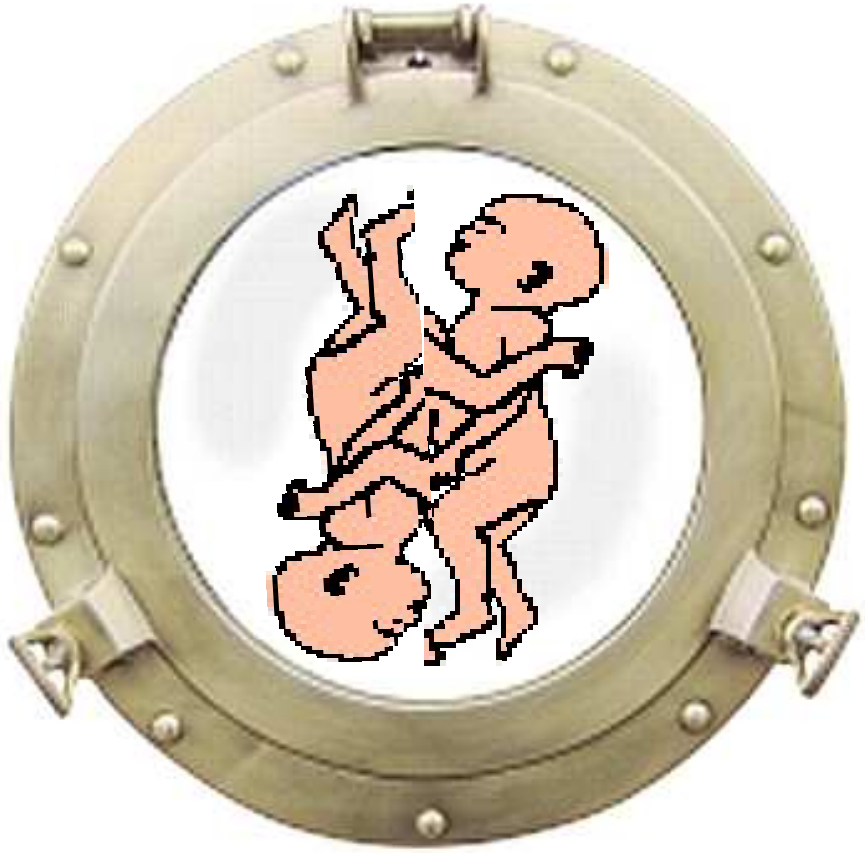

...a plan

Montag	Dienstag	Mittwoch	Donnerstag	Freitag	Samstag	Sonntag
15. Juni	16	17	18	19	20	21
Doctor A		Doctor B			Doctor C	
22	23	24	25	26	27	28
Doctor B					Doctor A	
29	30	1. Juli	2	3	4	5
Doctor B					Doctor D	
6	7	8	9	10	11	12
Doctor D				Doctor A		
13	14	15	16	17	18	19
Doctor A	ELECTIVE C.S.					

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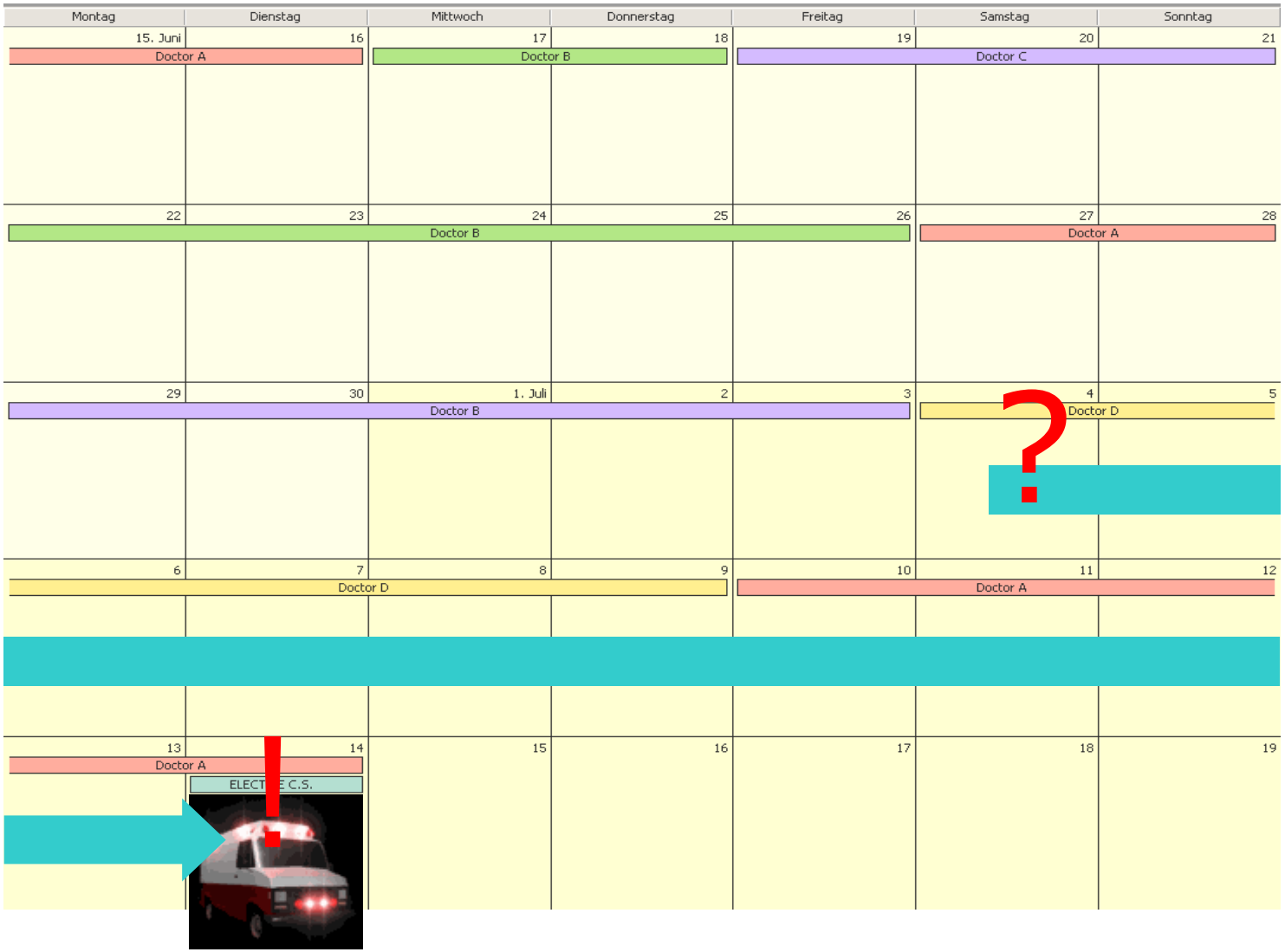
...a plan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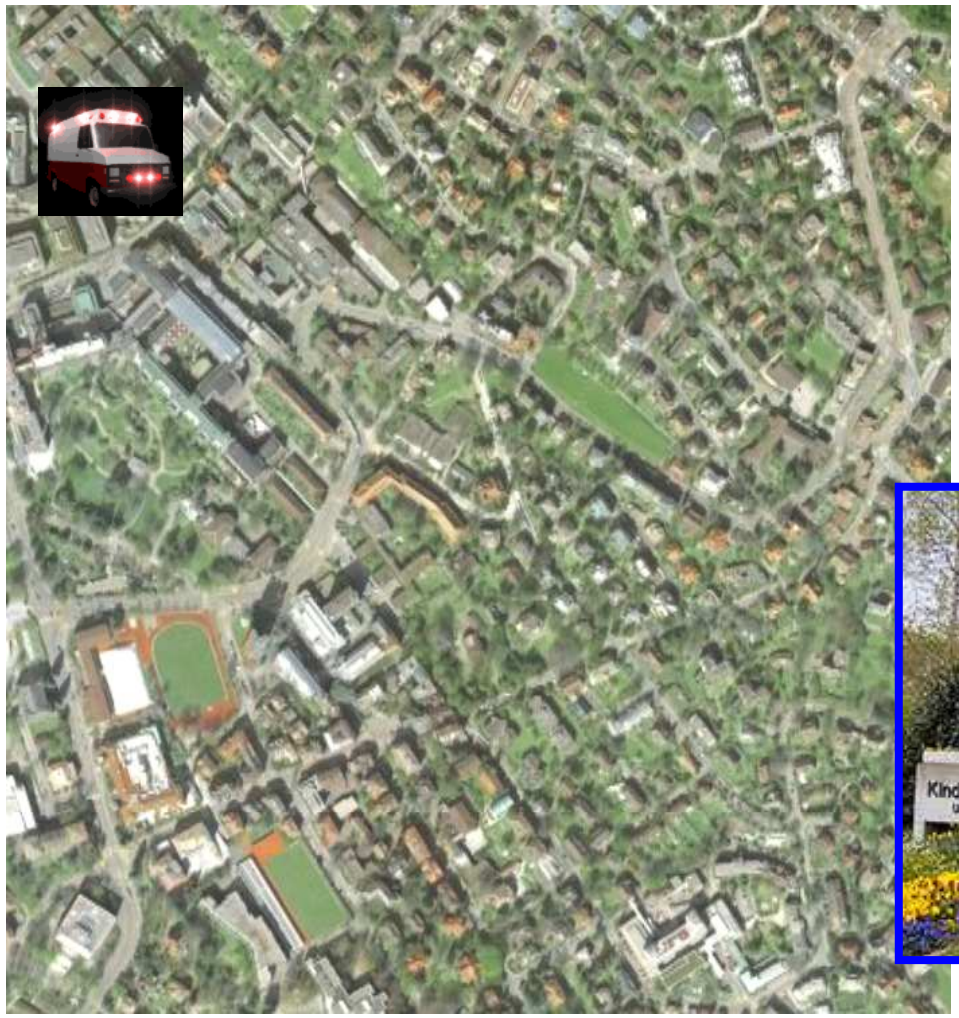
Doctor A
ELECT C.S.

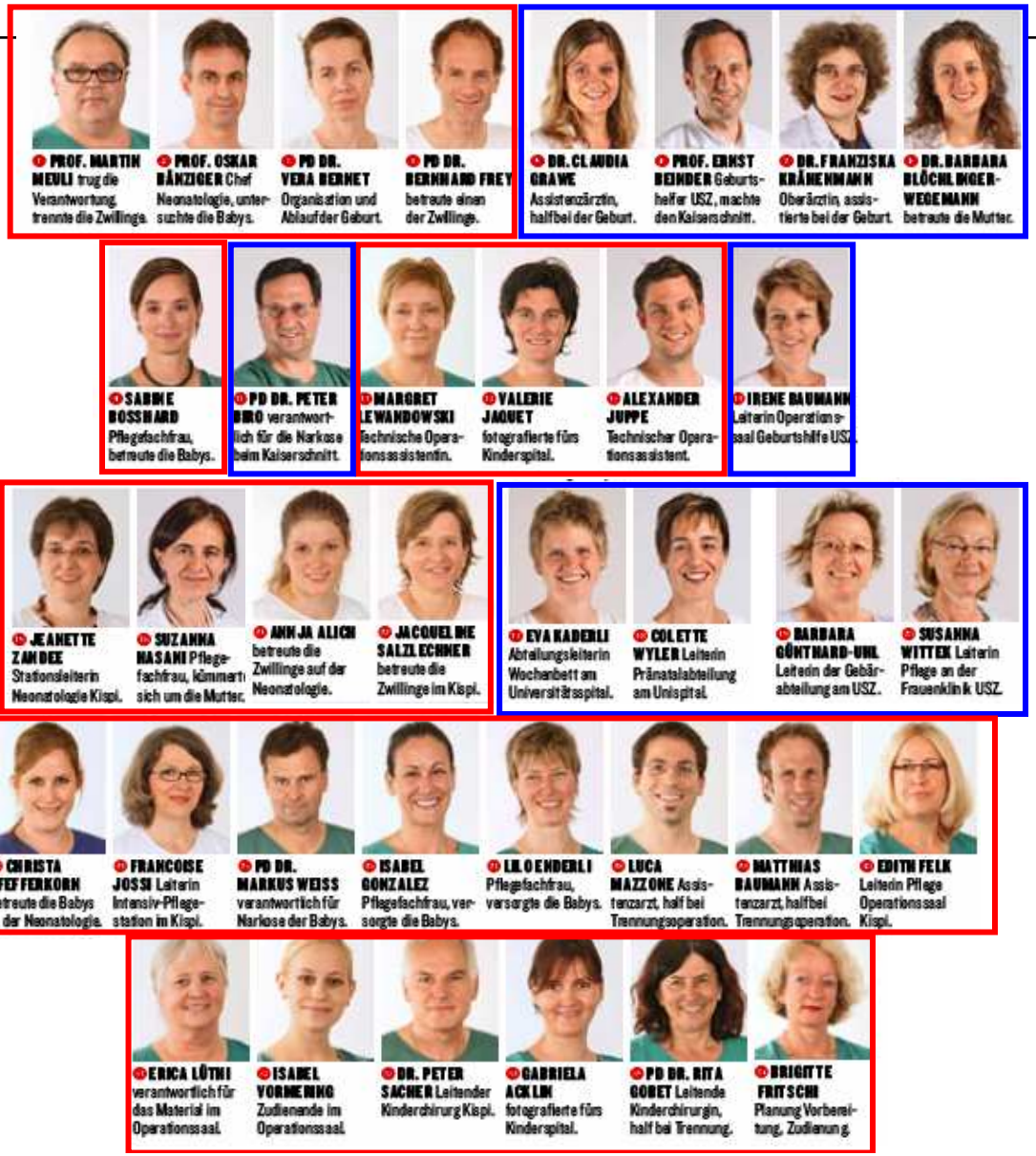
14 July 2007



14 July 2007


AUF ALLES GEFASST Prof. Martin Meuli 1 leitet das 35-köpfige Team von Spezialisten während der Kaiserschnittgeburt. Geburtshelfer, Anästhesisten, Neonatologen, Chirurgen, Pflegende und Assistenten sind für jeden Notfall gewappnet. *
* Die SI-Grafik zeigt die Situation im OP in der Übersicht. Tatsächlich standen die Spezialisten enger beisammen.
36 Spezialisten für e inen Kaiserschnitt

Who was (and still is) who



History

DIE GEBURT

13.00 Die Mutter wird mit der Ambulanz vom Universitätsspital USZ Zürich ins Kinderspital gefahren.
13.30 Das Team versammelt sich im OP. Dr. Markus Weiss, Chef-Anästhesist im Kispi, orientiert über den Ablauf.
14.00 Einleitung der Anästhesie bei der Mutter durch PD Peter Biro.
14.13 Start der Kaiserschnitt-Operation durch Prof. Ernst Beinder.
14.17 Die Babys sind geboren und wohlauf. Einer der Buben schreit sofort.
14.18 Prof. Ernst Beinder trägt die Kinder auf den Doppelbabytisch.
14.19 Prof. Oskar Bänziger, Neonatologe, und seine Leute untersuchen die Säuglinge. Martin Meuli kontrolliert die Gewebebrücke, die die Zwillinge verbindet.
14.20 Die Geburtshelfer versorgen die Mutter und nähen den Kaiserschnitt.
14.34 Martin Meuli entscheidet nach Rücksprache mit seinem Team, dass man die Kinder nicht sofort trennen muss. Sie werden auf die Intensiv-Pflegestation verlegt.

DIE TRENNUNG

Fünf Tage nach der Geburt ist es so weit.
11.10 Die Buben liegen auf dem Operationstisch. Nochmals werden Körperfunktionen wie Puls und Blutdruck überprüft.
11.21 Einleitung der Anästhesie beim ersten Buben. Der Schlauch durch den Mund zur Lunge, Intubation genannt, stellt die Atmung sicher.
11.33 Einleitung der Narkose beim anderen Zwilling. Auch er wird intubiert.
11.46 Anästhesisten positionieren die Kinder in Seitenlage.
11.57 Das Operationsfeld wird desinfiziert und steril abgedeckt.
12.18 Martin Meuli beginnt mit der Trennungsoperation. Ihm assistieren Dr. Rita Gobet und Dr. Peter Sacher.
12.58 Die Zwillinge sind getrennt.
13.01 Sie werden je auf einem separaten Operationstisch gelagert. Noch sind die Verbände provisorisch.
13.32 Die Bauchdecken der Buben werden verschlossen, jeder erhält einen Bauchnabel. An die siamesische Verbindung erinnert nur die kleine Narbe.
14.20 Die Intubationen werden entfernt. Die Kinder atmen selbstständig. Alle Werte sind normal.
14.41 Martin Meuli informiert die Eltern über die geglückte Operation. Die Kinder werden auf die Intensiv-Pflegestation zurückgebracht.

14. July 07

19. July 07

Result after birth

The aftermath