

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/228053000>

P09.18: Intrauterine repair of spina bifida: short-term clinical outcomes

Article in *Ultrasound in Obstetrics and Gynecology* · September 2005

DOI: 10.1002/uog.2452

CITATIONS

0

READS

8

6 authors, including:



Antonio Moron

University of São Paulo

429 PUBLICATIONS 2,425 CITATIONS

[SEE PROFILE](#)



C. G. Almodin

Universidade Federal de São Paulo

36 PUBLICATIONS 204 CITATIONS

[SEE PROFILE](#)



Sergio Cavalheiro

198 PUBLICATIONS 1,631 CITATIONS

[SEE PROFILE](#)



Wagner Jou Hisaba

Universidade Federal de São Paulo

53 PUBLICATIONS 173 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



Three-dimensional ultrasound in obstetrics [View project](#)



Journal of Power Sources [View project](#)

discordant hemoglobin levels were managed with intrauterine transfusion only (8), re-laser (2) or cord coagulation (3). Fetal survival was of 43% and 73% in cases with recurrent TTTS and isolated discordant hemoglobin levels, respectively ($p = 0.024$).

Conclusion: Incomplete coagulation and subsequent recurrent TTTS or isolated discordant hemoglobin levels occurred in 27% of double survivors. Serial ultrasound scan with MCA-PSV measurements proved invaluable in the follow-up of double survivors to detect isolated discordant hemoglobin levels at an early stage.

P09.16

Decrease in recipient to donor fetal venous flow imbalance (R/D index) in twin to twin transfusion syndrome after successful laser treatment

M. Yamamoto¹, J. P. Bernard², Y. Takahashi², R. Moreira de Sa², Y. Ville²

¹Clinica Alemana, Universidad del Desarrollo, Chile, ²CHI Poissy St. Germain-en-Laye, France

Objective: To correlate the fetal venous flow before and after treatment in twin to twin transfusion syndrome (TTTS).

Methods: Umbilical vein flow was measured in both twins, before and two days after treatment in 46 consecutive cases of TTTS. The changes in umbilical vein flow were expressed as R/D index and the pregnancy outcomes were described.

Results: Eleven, 18, 14 and 3 cases presented as Quintero stages 1 to 4 respectively, at 15 to 28 weeks (median 20 weeks). Three patients were treated by cord coagulation as first indication, 3 by drainage only and 40 by laser. From these, postoperative venous flow could not be completely measured in 7 pregnancies because of the death of one (4) or both twins (3) within 48 hours from laser treatment. In the 33 cases in which both twins were alive at measurement, R/D index decreased significantly from 3.07 to 1.83 (Wilcoxon paired test $p = 0.0005$). The vascular anastomoses were considered coagulated and pregnancy outcome as favourable if both twins survived at birth without evidence of anemia/polycythemia that needed *in utero* transfusion or poly/oligohydramnios recurrence that needed delivery, laser, cord coagulation or secondary amniodrainage. These 27 favourable cases showed a decrease in R/D index decrease from 3.24 to 1.75 ($p = 0.006$) and the 6 unfavourable cases with persistence of fetofetal transfusion, presented non significant R/D index decrease from 2.32 to 2.19 ($p = 0.17$).

Conclusions: Fetal umbilical vein flow imbalance between recipients and donors decreased after laser. The persistence of fetofetal transfusion was characterised by an absence of correction of this imbalance, suggesting that incomplete coagulation of anastomoses could be suspected as early as 48 hours after surgery.

P09.17

Radiofrequency ablation for twin reversed arterial perfusion sequence

S. Hayashi, H. S. Sago, M. K. Kitagawa, M. N. Natori, T. C. Chiba

National Center for Child Health and Development, Japan

Objective: Twin reversed arterial perfusion (TRAP) sequence is a rare anomaly in monozygotic twin pregnancy. Normal pump twin is at very high risk of perinatal death by cardiac failure or preterm delivery without treatment. Various therapeutic options have been proposed to discontinue blood flow to acardiac, nonviable twin and to protect the normal twin. A minimally invasive technique, radiofrequency ablation (RFA), was applied for TRAP sequence to perform selective reduction of the acardiac twin.

Methods: Eleven pregnancies complicated by TRAP sequence were referred to our institution. We applied RFA to treat TRAP sequence when the acardiac twin had blood supply with polyhydramnios. Six of eleven cases underwent selective reduction of the acardiac

twin with the use of RFA. A 1.45 mm (17 gauge) RFA needle was inserted to the acardiac twin through the maternal abdominal wall under ultrasound guidance. Energy was applied until termination of blood flow to the acardiac twin documented by Doppler ultrasound imaging.

Results: RFA was successfully performed in all 6 cases of TRAP sequence without complications. Five of 6 cases have been delivered. Four of 5 infants are alive and well. One infant was delivered at 26.1 weeks due to rupture of membrane and the infant died by complications of prematurity at 39 days old. The last case is 30 weeks of gestation now. Median gestational age at intervention in 6 cases was 21.1 weeks, and the median gestational age at delivery in 5 cases was 37.3 weeks.

Conclusions: RFA is a minimally invasive therapy for TRAP sequence that can effectively discontinue blood supply to acardiac twin. RFA can be performed safely without technical difficulties.

P09.18

Intrauterine repair of spina bifida: short-term clinical outcomes

A. Fernandes Moron, C. G. Almodin, S. Cavalheiro, A. M. Yamashita, W. J. Hisaba, R. M. Santana

Federal University of Sao Paulo, Brazil

Objective: The study was undertaken to evaluate short-term clinical outcomes with antenatal myelomeningocele (MMC) repair.

Methods: Retrospective review of six fetuses that underwent open fetal MMC closure was performed at Federal University of Sao Paulo, Brazil. Inclusion criteria included gestational age between 24 and 26 weeks, thoracic to S1 level defect, absent clubfoot deformity, Arnold-Chiari malformation, ventriculomegaly less than 17 mm, normal karyotype, and no other anomalies. The fetuses had a postnatal follow-up period of at least 12 months.

Results: Complete repair was accomplished in all fetuses and there was no perinatal mortality. The mean age at delivery was 33 weeks 3 days (29–35 weeks) and mean time between surgery and delivery was 43 days (11–61 days). Two of the six fetuses (33.3%) have required ventriculoperitoneal shunting compared with 93.0% historic controls and the lower extremity function was considered normal in three patients (50.0%).

Conclusion: Open surgical repair of fetal myelomeningocele is technically feasible procedure and suggests a decreased need for ventriculoperitoneal shunting, however, further long-term follow-up is needed to evaluate neurodevelopment function in order to compare with postnatal repair.

P09.19

Validation of the ovine fetus as an experimental model for the human myelomeningocele defect: preliminary results

D. A. L. Pedreira¹, R. C. Sanchez e Oliveira², P. R. Valente¹, R. C. Abou-Jamra¹, A. Araújo¹, P. H. N. Saldiva²

¹Instituto Dante Pazzanese de Cardiologia, Brazil,

²Faculdade de Medicina da Universidade de São Paulo, Brazil

Objective: To produce a myelomeningocele-like human defect in the ovine fetus.

Methods: Prospective study on 12 pregnant sheep, breed of Hampshire and Down where a surgical defect was created between days 72 and 77 after conception. To create the defect, a hysterotomy was performed and fetal lower limbs until mid spine were exposed. Then fetal skin, bilateral paraspinal muscles and 2 to 4 spine's posterior arches were excised, exposing the medulla. Duramater and the medulla itself were incised until the vertebral canal. Fetus were sacrificed at a gestational age ranging from 98 to 145 days. Central nervous system was submitted to post-mortem MRI and the spine was submitted to pathological examination.

Results: The study was divided in two phases: pilot and standard technique. The defect was created in 13 fetuses (2 twin