

Flexible fetoscopy for laser ablation of placental vascular anastomoses in monochorionic twin pregnancies with anterior placenta

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Rationale:

Fetoscopic laser surgery in complicated MCDA twins with an anterior placenta is technically challenging due to the tangential angle between conventional fetoscopes and the placenta, which may hinder visualization and laser coagulation. Flexible fetoscopy has been reported to be feasible and may facilitate laser treatment in these challenging cases.

Objectives:

To evaluate perinatal outcomes following flexible fetoscopic laser surgery for TTTS in MCDA twin pregnancies with an anterior placenta

Methods:

Retrospective multicenter cohort of MCDA twins with an anterior placenta complicated by TTTS between May 2021 and October 2025. Two surgical approaches were used: hybrid flexible fetoscopy (HFF), combining conventional and flexible fetoscopy, and full flexible fetoscopy (FFF). Intraprocedural complications and perinatal outcomes were recorded.

Results:

Forty-one MCDA twin pregnancies with an anterior placenta were treated using flexible fetoscopy. Quintero staging was: stage I, 22% (9/41); stage II, 17% (7/41); stage III, 46% (19/41); and stage IV, 15% (6/41). Median GA at surgery was 22.71 weeks (IQR 20.71–24.00). Fifty-six percent (23/41) of procedures were performed using FFF and 44% (18/41) using HFF. Mean fetoscopy duration was 27.8 (SD 14.69) minutes. No intraoperative complications, recurrent TTTS or post-laser TAPS were observed. PPRM occurred in 29% (12/41) at a median GA of 29.22 weeks (IQR 26.36–31.32). Median gestational age at delivery was 32,00 weeks (IQR 31.00–33.71). Double survival to hospital discharge was 56% (23/41), and survival of at least one twin was 83% (34/41).

Results	n=41
Double survival (n=23)	46%
At-least-one survivor (n=34)	84%
Median GA at birth (w)	32

Conclusions:

Flexible fetoscopy appears to be a feasible approach for laser ablation in MCDA twin pregnancies with TTTS and anterior placenta, allowing short operative times, absence of major intraoperative complications and favorable perinatal survival outcomes.

