Phrenic nerve palsy and Glenn anastomosis: One center 10 years experience

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Introduction Diaphragmatic paralysis after cardiac surgery due to bilateral phrenic nerve palsy is an important complication especially in infants with Glenn procedure. The best pulmonary condition is a key factor for success in monoventricular palliative surgery. The response of the patient to phrenic nerve palsy may range from an asymptomatic radiographic abnormality to severe pulmonary dysfunction requiring prolonged mechanical ventilation and other associated morbidities and even mortality. Indeed, with a global inci-
dence of 1.6% in most series, Glenn anastomosis appears to be one of the closed heart procedures of high risk of palsy.

Cohort A retrospective case control study was performed in 25 children suffering on bilateral phrenic nerve palsy surgically treated with transthoracic diaphragm plication since 2005, in 1 surgical center. 7 of these patients had Glenn anastomosis. 5 (70%) were less than 1 year old at plication time. 100%
were suffering on bilateral phrenic nerve palsy surgically treated with transthoracic diaphragm plication since 2005, in 1 surgical center. 7 of these patients had Glenn anastomosis. 5 (70%) were less than 1 year old at plication time. 100%
patients was very short (33 hours), as mean ICU hospitalization (3.4 days) and
in our hospital (15 days).

Even if early spontaneous recovery after phrenic nerve palsy is rare, it
finally occur in 84% of patients and diaphragm plication is safe, even in
young patients and don’t seems to be an obstacle for Fontan circulation.

Conclusion Diaphragm plication is an effective and safe treatment of dia-
aphragmatic paralysis and can be proposed even in patients with Glenn without
deteriorate success possibilities of Fontan circulation.

Conflict of interest The authors have not transmitted any conflicts of
interest.

Impact of precision prenatal diagnostic of congenital heart diseases on perinatal and long-term management

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Objective To Evaluate the impact of the precision of prenatal diagnosis of congenital heart diseases (CHD) on perinatal and long-term management.

Methods Over a 10-year period, 1258 neonates with a prenatally diagnosed CHD and 189 fetal autopsies after termination of pregnancy were included. Changes in CHD diagnosis were classified as totally different, similar but
different, completely different in 2.9%, led to changes in initial management in 8%, and did
not affect initial management in 19.3%. Imprecision in the prenatal diagnosis had a negative impact on long-term outcome in 4.9% of the cases, and a pos-
tive impact in 4.1%.

In the fetal autopsy group (mean term 26 weeks), the diagnosis was impre-
cise in 54.5% of the cases: completely different in 8.5%, could have led to changes in postnatal. Management in 14.3%, and with minor differences that
would not have led to changes in management in 31.7%. In both groups, the most frequent differences were anomalies of the outflow tract anatomy (43%), and the systemic or pulmonary veins (25%).

Conclusion Imprecision of prenatal diagnosis of CHD changes early management in 11% of the cases, and impacts long-term outcome in 9% of the cases. Improvement of CHD diagnosis for anatomy of the outflow tract and
main veins should help to reduce impact on postnatal management and out-
come.

Conflict of interest The authors have no conflict to declare.

Prognostic value of invasive hemodynamic parameters in Eisenmenger syndrome

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Usefulness of cardiac catheterization in Eisenmenger syndrome is contro-
versial. We investigated the prognostic value of invasive hemodynamic
parameters.

Methods 69 consecutive patients with congenital heart disease and pulmo-
mary vascular resistance (PVR) >84UW.m² (Eisenmenger syndrome, n=63; non-
correctable left-to-right shunt, n=6), with at least 1 catheterization after 1994,
were included. Pulmonary artery pressures (PAP) and oxygen (O₂) consump-
tion were measured using the same standardized method. PVR were calculated
using the Fick principle. Outcome was assessed in 2015 and survival analysis
was performed.

Results Mean age at first catheterization with this protocol was 38±13.3
y.o.. Pre-tricuspid, post-tricuspid and combined shunts were observed in 44
(63.8%), 23 (33.3%) and 2 (2.9%) cases. Patients were free of any pulmonary
anti-hypertensive drugs in 54 (78.3%) cases. A WHO status 3 or 4 was
observed in 37 patients (53.6%). Median PVR and diastolic PAP were 24.6
[19.2-37.6] UW.m² and 40.0 mmHg [34.5-50]. There was no complication.

During a median follow-up of 7.2 y. [5.2-11.6], 23 (33.3%) patients reached a
desirable outcome (death n=12; heart-lung transplantation n=8; trans-
plantation list registration n=7). Outcome was associated with pulmonary
O₂ sat. <70% (p=0.01), aortic O₂ sat. ≤88% (p=0.02), mixed venous blood O₂ sat.
≤65% (p=0.01), PVR ≥30UW.m² (p=0.02), diastolic PAP ≥45mmHg (p=0.01)
and who 3-4 (p=0.01). After adjustment for the position of the shunt and the number of anti-hypertensive drugs, diastolic PAP 45mmHg and Who 3-4
remained associated with outcome in Cox regression analysis (HR 5.6, p=0.006; HR=5.3, p=0.008). There were trends that did not reach significance
for the other hemodynamic parameters.

Conclusion In addition to functional status, first catheterization provides
prognostic information in patients with Eisenmenger syndrome. If these infor-
mation could improve the therapeutic algorithm remains to be demonstrated.

Conflict of interest The authors have not transmitted any conflicts of
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