Sustaining a Pregnancy Despite the Odds - High Risk LVNC Delivery

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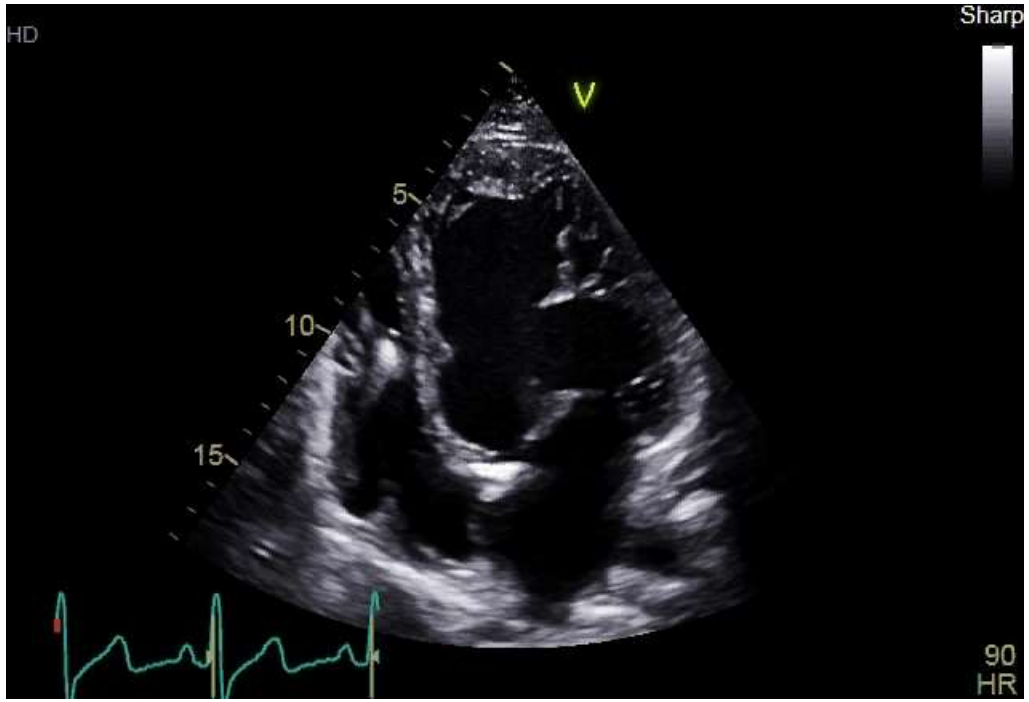
OBJECTIVES

- Background information
- Effects on pregnancy
- Published cases
- Our case
- Maternal and fetal course
- Conclusions
- References

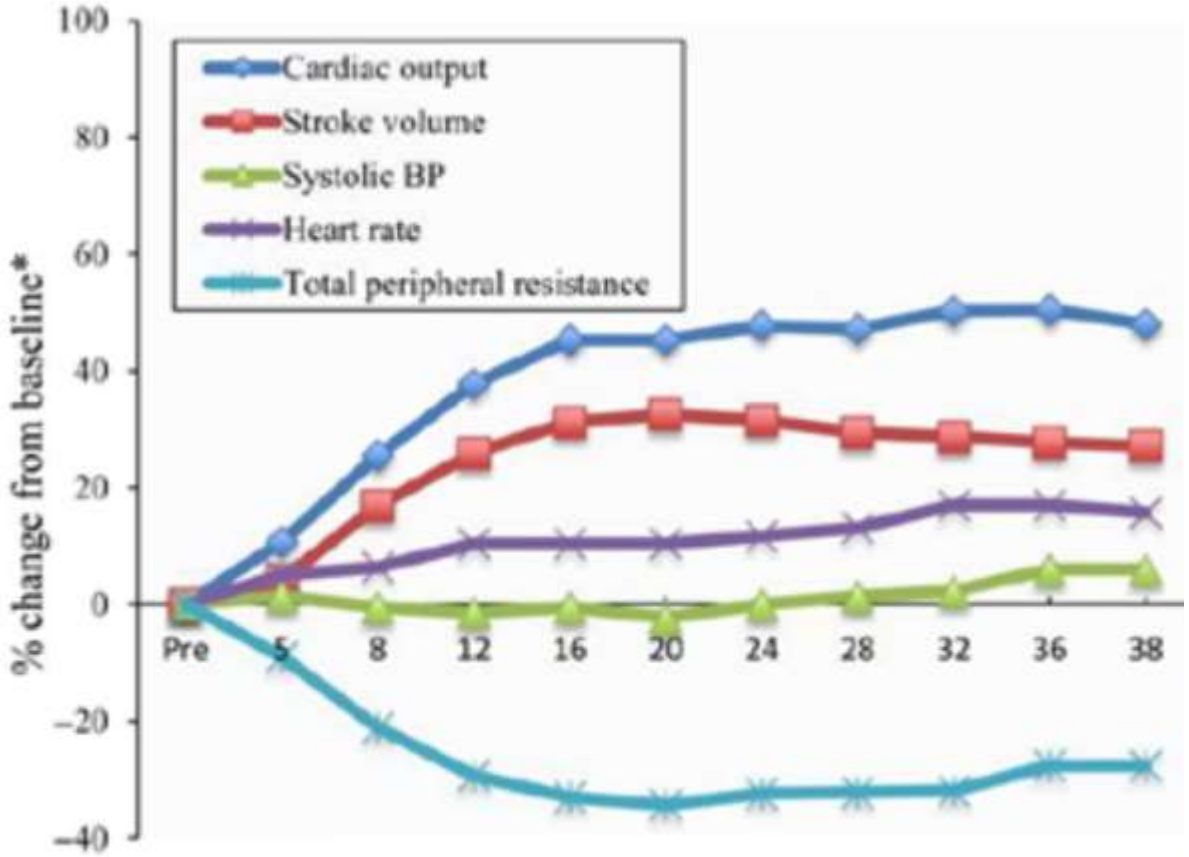
Left Ventricular Noncompaction Cardiomyopathy

- Unclassified cardiomyopathy.
- Excessive trabeculations and intratrabecular recesses in one or more segments of the ventricular wall. (1)
- Manifests with embolic events, heart failure and arrhythmias. (2)



Effects of Pregnancy

- Not well defined. (15)
- Need for close follow-up and intensive treatment.
- Anticoagulation can be considered to prevent embolic events. (15)



Greutmann, M., Pieper, P .Eur Heart J. June 2015

Table 1 (3-19)

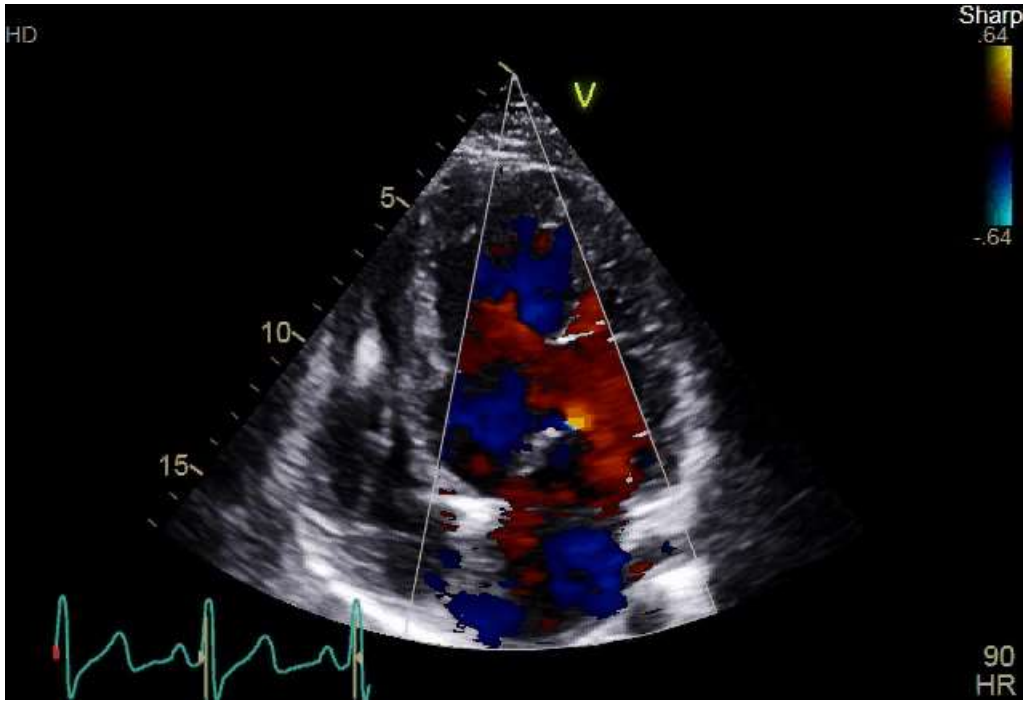
Pregnancies in patients with already known left ventricular hypertrabeculation/noncompaction.

Author	Age	Diagnosis of LVHT	Symptoms during Pr	Therapy during Pr	Delivery	Outcome of mother	Outcome of child	Additional
[Spitzer, 2015]	31 a, G4, P1	After first Del, 4 years PrePr	HF at 30 GW, pulmonary hypertension	NI	CS at 34 GW because HF	Pharmacotherapy, refused ICD	NI	Pr despite counselling against
[Pandarunga, 2012]	30 a, G3, P2	1 year PrePr	Asymptomatic	none	NI	Pharmacotherapy, anticoagulation	NI	Endocervical adenocarcinoma one year before Pr, LV EF 35%
[Sawant, 2013]	37 a, G1	3 years PrePr	Palpitations, HF	Bisoprolol, furosemide, LMWH	CS at GW34	Cardiogenic shock 10 days after Del, Pharmacotherapy, ICD	NI	Mother dilated CMP, sister and brother LVHT, LV EF 35%, VT in Holter, Pr despite counselling against
[Plastiras, 2012]	32 a	2 months PrePr	Asymptomatic	None, close follow-up	Vaginal	NI	NI	Good systolic function
[Kobza, 2010]	NI	PrePr, ICD	NI	NI	CS	NI	NI	NI
[Kobza, 2010]	NI	PrePr, ICD	NI	NI	CS	NI	NI	NI
[Stöllberger 2014]	24 a G1	2 years PrePr	Asymptomatic	Close follow-up	Vaginal	UE	UE	Good systolic function
[Stöllberger 2014]	29 a G3, P2	4 years PrePr	Asymptomatic	Close follow-up	Vaginal	UE	UE	Good systolic function

CS = Caesarean section, Del = delivery, G = gravidity, GW = gestational week, HF = heart failure, ICD = implanted cardioverter defibrillator, LVHT = left ventricular hypertrabeculation/noncompaction, UE = uneventful, NI = not indicated, P = para, Pr = pregnancy, PrePr = before pregnancy.

Case

- 21-year-old female G1P0 at 21 weeks GA with LVNC & VF arrest s/p ICD placement 2/2 acquired LQTS.
- Noting some reduction in exercise tolerance and dyspnea on exertion.
- EF 32%, 3+ MR, & dilated LV.
- Admitted for a high risk pregnancy.



Case

- Hospitalization complicated by polymorphic VT arrest with ICD failure requiring external shock with immediate ROSC .
- Transferred to the Cardiac ICU
- Discussion with patient regarding mortality risk with delivery vs termination at 22 weeks.

Counseling & Delivery

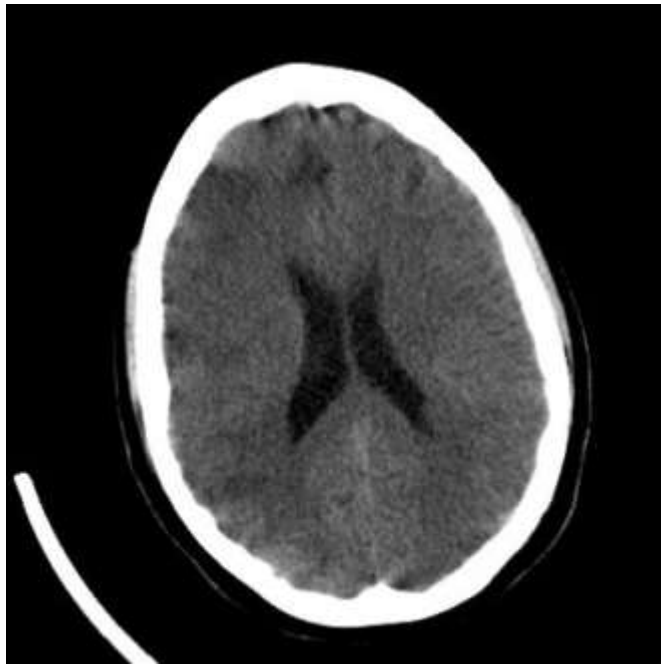
- Subsequent arrests will play a major role in neonatal outcome.
- Neonatal estimated survival is 65% at 24 weeks & 75-80% at 25 weeks.
- Patient decided against termination.
- Betamethasone after 23 weeks gestation.
- At 26 weeks GA she underwent IABP-assisted C-section.

Post-partum Course

- **Day 30** IABP assisted C-section at 26 weeks gestation.
- **Day 36** Defibrillator Threshold testing (DFT) with device failure requiring external shocks. VA ECMO for cardiogenic. Atrial pacing and therapeutic hypothermia.

Post-partum Course

- **Day 39-42** ECMO decanulated. DVT & GIB - IVC filter
- **Day 56** Ventilator associated pneumonia, multidisciplinary meeting regarding prognosis. DT with LVAD
- **Day 57** Large MCA stroke requiring emergent thrombectomy
- **Day 64** Tracheostomy
- **Day 125** Gradual improvement with discharge to rehab



Neonatal Course

- Born at 26 weeks, APGAR 1,3,6 admitted to NICU.
- Congenital hypertrophic pyloric stenosis.
- Large PDA necessitating percutaneous PDA closure.
- Discharged at 5 months of age
- Chronic lung disease requiring supplementary O_2

Conclusions

- Adopt a multidisciplinary approach.
- Pregnancy is a hypercoagulable state, and LVNC could be a reservoir for emboli.
- Close follow-up and admission for high risk features.
- Our case highlights the morbidity associated with a successful pregnancy in patients with a high-risk profile.

THANK YOU

Acknowledgements
David Majdalany
Katherine Singh
Peter Aziz
Kenneth Zahka
Edward Soltesz
Shinya Unai
Michael Tong
Eileen Hsich

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