Case Report

Alcohol septal ablation for severe hypertrophic obstructive cardiomyopathy during pregnancy: Rare presentation a successful procedure

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Abstract

Background: Hypertrophic Obstructive Cardiomyopathy (HOCM) during pregnancy is rare but poses significant maternal and fetal risks due to increased cardiac workload and dynamic left ventricular outflow tract (LVOT) obstruction. We report a 21-year-old primigravida at 28+6 weeks gestation who presented with progressive dyspnea and bilateral pedal edema. Echocardiography revealed HOCM with severe LVOT obstruction (150/20 mmHg) and mild mitral regurgitation. Following multidisciplinary evaluation, the patient underwent Alcohol Septal Ablation (ASA) under fetal protection shield and temporary pacing support. Post-procedure, LVOT gradient reduced to 45/15 mmHg with hemodynamic stability and satisfactory fetal wellbeing. The patient improved clinically and was discharged in stable condition. This case highlights the feasibility, safety, and innovation of performing ASA during pregnancy with collaborative multidisciplinary support, ensuring favorable maternal and fetal outcomes.

Keywords: Hypertrophic Obstructive Cardiomyopathy; Pregnancy; Alcohol Septal Ablation; LVOT Obstruction; Fetal Protection; High-Risk Pregnancy; Maternal Cardiology; Innovation.

1. Introduction

Hypertrophic Obstructive Cardiomyopathy is a genetic cardiac disorder characterized by asymmetric septal hypertrophy leading to LVOT obstruction. Pregnancy physiologically increases blood volume and cardiac workload, which may precipitate worsening obstruction, arrhythmias, syncope, heart failure, and sudden cardiac death. Management during pregnancy is complex and requires balancing maternal cardiac stability with fetal safety. Although alcohol septal ablation is a recognized treatment in non-pregnant patients, its role during pregnancy remains limited to rare situations [1]. This case

demonstrates a successful ASA procedure conducted during the third trimester using innovative fetal protection strategies and multidisciplinary planning [2].

2. Case presentation

A 21-year-old primigravida at 28 weeks + 6 days presented with progressively worsening breathlessness for three weeks associated with bilateral leg swelling. There was no history of chest pain, syncope, palpitations, hypertension, or prior cardiac illness. On admission, she was hemodynamically stable. Obstetric evaluation confirmed a viable intrauterine fetus with good cardiac activity and movements. [3,4].

3. Clinical Examination

- Conscious and oriented.
- NYHA Class III dyspnea.
- Bilateral pedal edema present.
- Cardiovascular examination revealed systolic murmur.
- No neurological deficit.

Pulse	96 beats /min
Blood Pressure	110/70 mmHg
Respiratory Rate	20 breaths /min

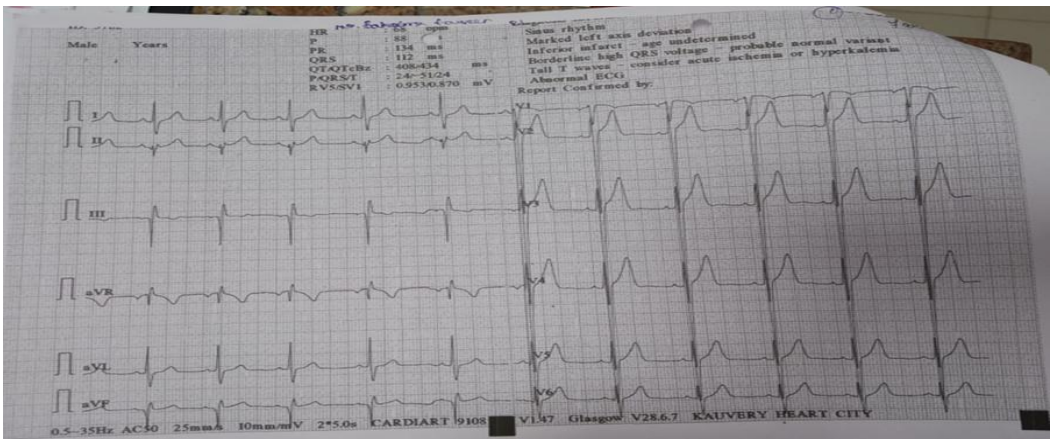


Fig (1): ECG Report

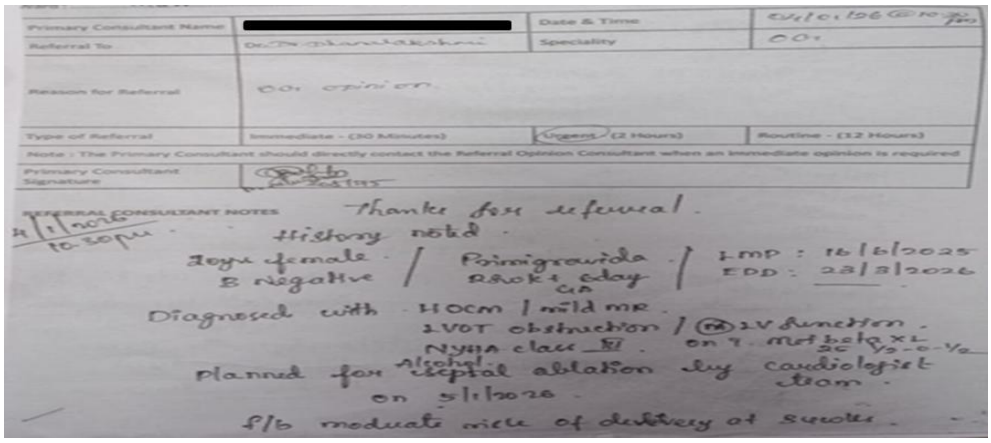
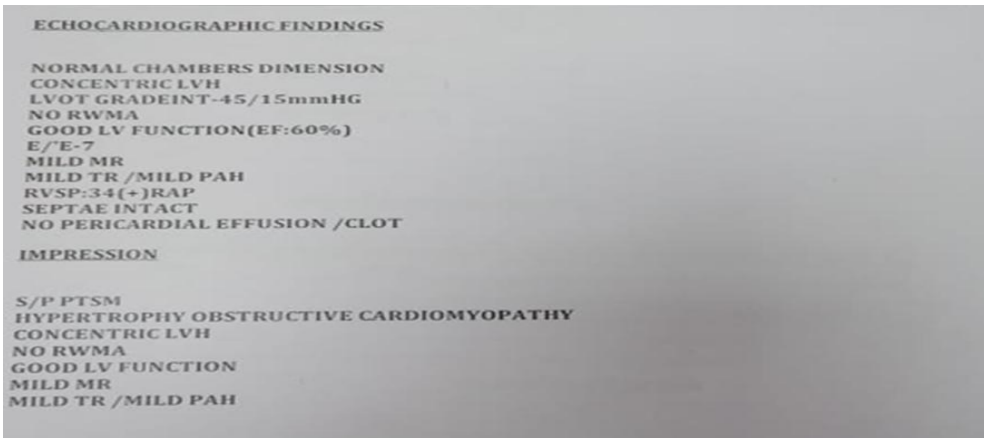


Fig (2): Cross Reference Report

4. ECHO Report

Investigations



- Echocardiography.
- Hypertrophic Obstructive Cardiomyopathy.
- Severe LVOT obstruction.
- Pre-procedure gradient: 150/20 mmHg.
- Mild mitral regurgitation.
- Normal left ventricular systolic function.
- Obstetric Assessment.
- Single live fetus.
- Normal fetal heart sound.
- Good fetal movement.

- No signs of distress.

5. Diagnosis

Hypertrophic Obstructive Cardiomyopathy with Severe LVOT Obstruction in Pregnancy (28+6 weeks), NYHA Class III.

6. Management

Pre-Procedural Planning

The case was reviewed by a multidisciplinary team comprising:

- Cardiologist.
- Obstetrician.
- Anesthesiologist.
- Neonatologist.
- Nursing care team.

High maternal risk and possibility of preterm delivery were discussed. Informed written consent was obtained. Continuous maternal fetal monitoring was planned.

7. Innovative Intervention

1. The patient underwent Alcohol Septal Ablation (ASA) under:
    - Temporary pacing support.
    - Continuous hemodynamic monitoring.
    - Fetal protection shield.
    - Continuous fetal surveillance.
    - Procedure Outcome.
    - Successful alcohol septal ablation performed on 05.01.2026.
2. Post-procedure echocardiography showed:
    - LVOT gradient reduced to 45/15 mmHg.
    - No arrhythmias or hemodynamic instability occurred.
    - Fetal heart rate remained stable.
    - No procedural or post-procedural complications.
3. Medical Therapy.

4. Beta-blockers.
5. Supportive cardiac medications.
6. Regular obstetric follow-up continued.

8. Outcome and Follow-Up

Maternal symptoms significantly improved post-procedure. Dyspnea reduced and clinical stability was achieved. Fetal wellbeing remained satisfactory with normal movements and heart activity. The patient was discharged in stable condition with advice for regular cardiology and antenatal follow-up, medication compliance, and monitoring for preterm labor.

9. Discussion

HOCM during pregnancy carries considerable maternal and fetal risks due to hemodynamic changes. Severe LVOT obstruction demands timely intervention when symptoms progress despite medical therapy. Alcohol septal ablation is effective in reducing obstruction and improving symptoms; however, its use during pregnancy is rarely reported due to concerns regarding fetal exposure and procedural risk.

This case demonstrates that with:

- Careful risk assessment.
- Multidisciplinary coordination.
- Innovative fetal protection techniques.
- Continuous monitoring.

ASA can be safely and successfully performed during pregnancy, preventing maternal cardiac deterioration and ensuring fetal safety. The procedure significantly improved functional capacity and reduced LVOT gradient without complications, representing a significant advancement in cardiac management during pregnancy.

10. Nursing Implications

Nursing care was crucial throughout:

- Pre-procedural counseling and anxiety reduction.
- Continuous maternal monitoring.
- Strict aseptic precautions.
- Fetal surveillance.
- Post-procedural observation for arrhythmia, bleeding, and hemodynamic changes.
- Education regarding medications and follow-up.

- Emotional and family support.

11. Conclusion

Alcohol Septal Ablation during pregnancy is a life-saving intervention when severe LVOT obstruction compromises maternal wellbeing. With expert multidisciplinary involvement and innovative fetal protection strategies, the procedure can be safely performed with excellent maternal and fetal outcomes. This case emphasizes the importance of advanced cardiac care, innovation, and collaborative practice in managing high-risk pregnancies.

References

[1] Elliott PM, Anastasakis A, Borger MA, Borggrefe M, Cecchi F, Charron P, et al. 2014 ESC Guidelines on diagnosis and management of hypertrophic cardiomyopathy. Eur Heart J. 2014;35(39):2733–79.

[2] Regitz-Zagrosek V, Roos-Hesselink JW, Bauersachs J, Blomstrom Lundqvist C, Cífková R, De Bonis M, et al. 2018 ESC Guidelines for the management of cardiovascular diseases during pregnancy. Eur Heart J. 2018;39(34):3165–241.

[3] Ommen SR, Maron BJ, Olivotto I, Maron MS, Cecchi F, Betocchi S, et al. Long-term effects of alcohol septal ablation on clinical course of obstructive hypertrophic cardiomyopathy. Circulation. 2005;111(11):145–51.

[4] Maron BJ, Spirito P, Ommen SR, Olivotto I, Maron MS, Cecchi F, et al. Clinical outcome of hypertrophic cardiomyopathy diagnosed during pregnancy. J Am Coll Cardiol. 2003;42(4):754–9.