

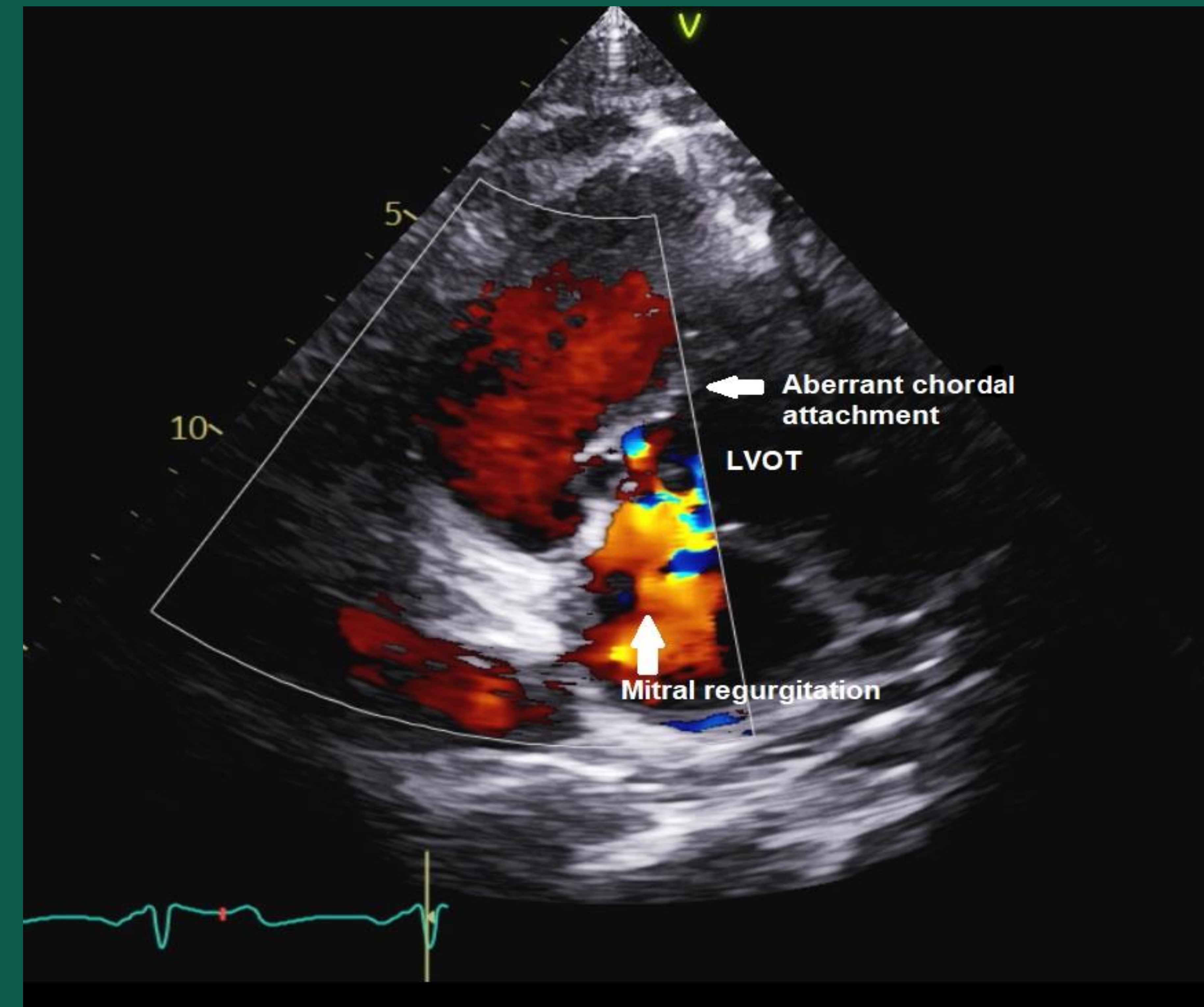
BACKGROUND

- Congenital mitral valve cleft defects occur in 1 in 1340, of which chordae malinsertion with left ventricular outflow tract (LVOT) obstruction occurs in 13%.^{1,2}
- These lesions provide conflicting hemodynamic goals, complicating obstetric anesthetic management.

CASE

- **26F G1P0** presented late for cardio-obstetric evaluation at **21 weeks** despite congenital cardiac history.
- History included **severe mitral regurgitation** due to congenital cleft, primum ASD repaired at 13 months with revision at 16 months due to patch dehiscence, and **LVOT obstruction** from anomalous chordal attachment.
- Admission transthoracic echocardiogram (TTE) at 36 weeks showed **fixed** (unchanged with Valsalva) LVOT peak gradient of 17mmHg – would trial labor.
- Fetus found in breech presentation, thus successful external cephalic version was managed with dural puncture epidural (100mcg fentanyl, 12.5mL 3% chloroprocaine in divided doses), vasopressin for hypotension, no fluid bolus.
- Labor induced with dinoprostone and oxytocin, but cesarean delivery indicated after labor arrest at 19 hours.
- **Arterial line** placed, **epidural gradually** loaded with 17.5 mL 3% chloroprocaine and 100mcg fentanyl, vasopressin used for hypotension, esmolol to avoid tachycardia.
- **Tranexamic acid** pre-emptively given after delivery as postpartum hemorrhage unlikely to be tolerated.

Cardio-obstetric Management of Mitral Cleft with LVOT Obstruction in a Rural Setting



Transthoracic Echocardiogram (TTE) parasternal long view with color Doppler showing severe mitral regurgitation and LVOT anomaly



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POST-OP

- Estimated blood loss of 700mL, recovered 2 hours in PACU where vasopressin was quickly weaned, discharged post-op day (POD) 3.
- POD4 re-presented with worsened leg edema, normotensive, creatinine 0.67.
- Discharged with furosemide and daily weights for 5 days.
- POD15 presented to outside hospital with seizure-like activity, normal platelets/metabolic panel, treated with magnesium and levetiracetam.

DISCUSSION

- Trial of unassisted vaginal delivery allowed due to low LVOT gradient with no dynamic obstruction.
- Mitral regurgitation treated as dominant lesion since LVOT obstruction was fixed, but considering LVOT gradient, **hemodynamic goals** included maintaining higher afterload/mean arterial pressure, normal heart rate, and sinus rhythm, and avoiding fluid overload.
- Cardiac Disease in Pregnancy (**CARPREG**) II score of 3 conferred a 15% risk of cardiac event.
- Both ECV and cesarean delivery successfully managed with epidural and thoughtful hemodynamic planning.
- Postpartum edema and seizure possibly post-syncopal (aggressive diuresis or arrhythmia) or less likely due to eclampsia given little supporting evidence.
- Coordination of obstetric care for complex congenital heart disease is critical in rural health centers.
- Maternal morbidity **odds ratio of 1.61** in rural centers as compared to major city centers.³

REFERENCES:

1. Ann Thorac Surg 75(6):1752-62
2. Eur J Cardio-Thorac Surg 34(4):751-754
3. Maternal and Obstetric Care Challenges in Rural America Policy Brief and Recommendations to the Secretary. National Advisory Committee on Rural Health and Human Services. Department of Health and Human Services. May 2020.