

When Form Reflects Dysfunction:

Takotsubo Cardiomyopathy in Pregnancy

PATHOPHYSIOLOGY

Catecholamine Surge

STRESS → HPA axis → epinephrine and norepinephrine release

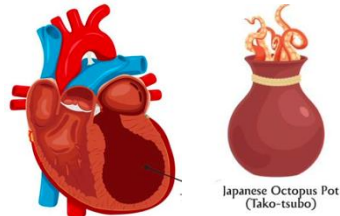
Myocardial Mechanism

β -receptor overstimulation → negative inotropy, cardiomyocyte toxicity, and microvascular spasm → apical ballooning with basal hyperkinesis.

Why Pregnancy?

Labor, delivery, and laryngoscopy are potent catecholamine triggers. Contrast with PPCM, which is inflammatory/angiogenic with global LV dysfunction.

Pillitteri et al., J Anesth Analg Crit Care 2024



CLINICAL PRESENTATION & DIAGNOSIS

Presentation

Chest pain, dyspnea, or syncope mimicking ACS. Troponin/BNP elevated. ECG: T-wave inversions (V2–V4), QTc prolongation. Rule out obstructive CAD.

Echo Hallmarks

Apical ballooning + basal hyperkinesis beyond a single coronary territory. Regional WMAs not confined to LAD, RCA, or circumflex. “Octopus pot” appearance of LV.

ESC 2018 Diagnostic Criteria

Transient LV dysfunction beyond one territory; stress history; troponin/BNP elevation; exclude CAD, plaque rupture, myocarditis, pheo. EF recovers within weeks; recurrence ≈10%. (Ghadri JR et al., Eur Heart J 2018)

Case of Recurrent Intrapartum TCM

PRESENTATION, WORKUP & MANAGEMENT

Patient

33 y/o G5P3013, 38w0d. Prior postpartum TCM (2020, EF nadir 45%). PMH: obesity, OSA, GERD. PSH: cesarean ×2. Acute chest pain and dyspnea. Anxious, diaphoretic. BP 123/71, HR 78, SpO₂ 99%

Workup

Trop T 390 (nl <147), BNP 221 (nl <125). ECG: T-wave inversions V2–V4, no ST changes. POCUS → TTE confirmed EF 45–47%, apical hypokinesis. CT coronary: no CAD.

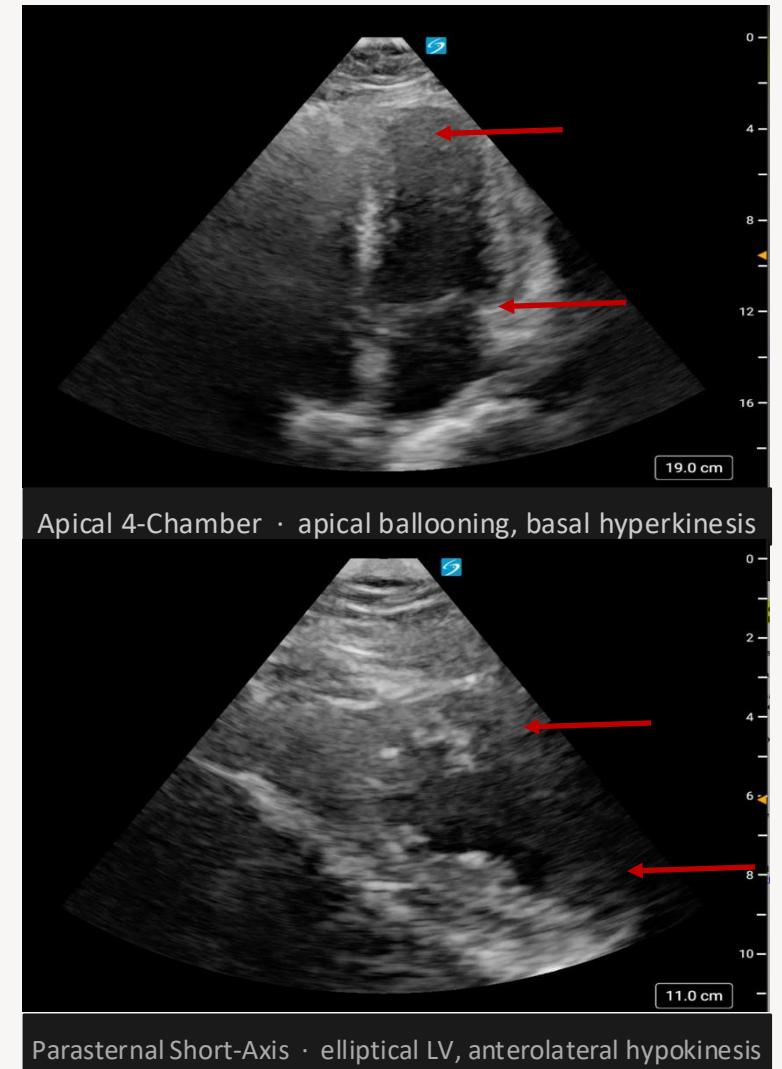
Anesthesia & Delivery

CSE with slow epidural titration to T4. Phenylephrine infusion. Healthy neonate. Serial POCUS confirmed stable apical ballooning throughout, no LVOT obstruction. QBL 975 mL (atony → oxytocin + massage). 1.5L LR.

Recovery & Follow-Up

Post-op hypotension (POCUS: hypovolemic) → fluids. Telemetry ×72h. Discharged POD4. TTE at 8 weeks: EF 51–61%, wall motion normalized.

POCUS FINDINGS — INTRAPARTUM



Key Teaching Points

01

POCUS Drives Diagnosis

Bedside POCUS showing apical ballooning and basal hyperkinesis prompted the diagnosis prior to formal TTE. Anesthesiologists proficient in POCUS can identify morphology in real time.

02

Neuraxial Anesthesia is Preferred

CSE with slow, incremental epidural dosing. Minimize abrupt afterload reduction. Avoid sympathetic surge from inadequate analgesia or laryngoscopy.

03

Phenylephrine is First-Line

Pure α -agonism restores afterload without raising HR or contractility. Avoid ephedrine, dopamine, dobutamine — catecholamine excess worsens the underlying β -receptor overstimulation. (Ghadri JR et al., Eur Heart J 2018)

04

Obstetric Drug Selection

Oxytocin: 
Carboprost: 
Methergine: 
Terbutaline: 
Nitroglycerin: 

05

Multidisciplinary Planning is Essential

06

Prognosis is Favorable; Follow-Up Matters

LV function typically recovers within 4–8 weeks. Recurrence $\approx$ 10%. Arrange cardiology follow-up, remote BP monitoring, and counsel on recurrence risk (Lyon et al., JACC 2021)