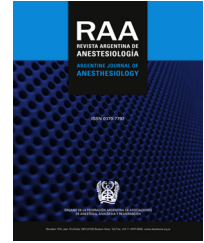




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## CLINICAL CASE

# Labor epidural analgesia in parturients with Transposition of Great Arteries



Thrivikrama Padur Tantry<sup>a,\*</sup>, Vrinda Shetty<sup>b</sup>, Sunil P. Shenoy<sup>c</sup>, Karunakara Adappa<sup>a</sup>

<sup>a</sup> Department of Anaesthesiology, A J Institute of Medical Sciences and Research Centre, Kuntikana, Mangalore, India

<sup>b</sup> Department of Obstetrics and Gynecology, A J Institute of Medical Sciences and Research Centre, Kuntikana, Mangalore, India

<sup>c</sup> Department of Urology, A J Institute of Medical Sciences and Research Centre, Kuntikana, Mangalore, India

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### KEYWORDS

Congenital heart disease;  
Transposition of Great Arteries;  
Labor analgesia;  
Lumbar epidural

### Abstract

**Background:** Congenital heart disease (CHD), by adversely influencing vascular dynamics, jeopardizes maternal and fetal well-being. Transposition of Great Artery (TGA) with associated anomalies constitute less than 5% of the total. Reports of successful pregnancies with co-existing TGA are anecdotal.

**Methods:** Two pregnant with TGA who were earlier advised against the continuation of pregnancy by cardiologists were admitted for safe confinement. Severe hypoxemia and associated features of CHD were markedly noticed in both of them. Both patients were administered titrated lumbar epidural labor analgesia with levobupivacaine for vaginal delivery.

**Results:** Both parturients underwent successful vaginal deliveries. However, hypoxemic status was reflected by significantly elevated blood lactate levels in both patients.

**Conclusion:** Continuation of pregnancy could entail unacceptable risk in patients with TGAs. Patients should be made aware of the risk to life borne for the sake of the unborn; and termination should be advised at the earliest convenience in case the patient agrees.

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\* Corresponding author.

E-mail address: [drpptantry@yahoo.com](mailto:drpptantry@yahoo.com) (T.P. Tantry).

**PALABRAS CLAVE**

Cardiopatía congénita;  
Trasposición de las grandes arterias;  
Trabajo de parto;  
Analgésia epidural lumbar

**Analgésia epidural en pacientes con trasposición de los grandes vasos****Resumen**

*Antecedentes:* La cardiopatía congénita pone en riesgo el bienestar materno-fetal debido al potencial efecto hemodinámico del bloqueo regional. La trasposición de las grandes arterias (TGA) constituye menos del 5% del total de las enfermedades cardíacas y pocos casos han sido reportados exitosamente en embarazadas sometidas a anestesia neuroaxial.

*Métodos:* Dos pacientes gestantes portadoras de TGA con indicación de anticoncepción por riesgo de vida fueron tratadas. En ambas pacientes se observó hipoxemia severa, habiendo sido intervenidas con técnica epidural lumbar con levobupivacaína para el trabajo de parto.

*Resultados:* Los nacimientos fueron satisfactorios en ambos casos a pesar de que la condición hipoxémica se reflejara en los niveles de lactato sanguíneo.

*Conclusión:* La continuación del embarazo podría entrañar riesgo inaceptable en pacientes con TGA. La paciente debe ser consciente del riesgo de vida fetal y la terminación debe ser aconsejada con la mayor brevedad posible si el paciente está de acuerdo.

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**Introduction**

Pregnancy, as it advances, is accompanied by a slew of alterations in maternal hemodynamics. Congenital heart disease (CHD), by worsening vascular dynamics, jeopardizes maternal and fetal wellbeing. The uncommon association of uncorrected maternal cyanotic CHD and pregnancy does contribute to a significant maternal mortality rate.<sup>1</sup> Maternal and fetal mortality to the tune of 12–33% and 30–54% respectively have been reported in Eisenmengers syndrome.<sup>2</sup> Transposition of Great Artery (TGA) with associated anomalies constitute less than 5% of the total, and successful pregnancies with coexisting TGAs have hardly been reported. A 'Medline' search revealed scarce reports linking TGA and dextrocardia with normal delivery, labor analgesia or lumbar epidural. We herein report uneventful successful vaginal deliveries under lumbar epidural labor analgesia in two parturients complicated by TGAs.

**Case presentation****Case 1**

A 28-year-old, 62 kg, who was admitted at 32 weeks of gestation, for safe confinement, gave history of intermittent palpitations and breathlessness; New York Heart Association grade II. Physical examination revealed central cyanosis and a grade 3/6 ejection systolic murmur (ESM), saturation of 86% in room air. Her investigations revealed normal renal functions, electrolytes, coagulation functions and albumin 3.5. Blood gas analysis showed pH of 7.47, pCO<sub>2</sub> 29 mmHg, pO<sub>2</sub> of 59.5 mmHg, base excess (BE) of -1.4 and bicarbonate of 23.9 on room air. Her serum lactate (La<sup>-</sup>) level was 19.6 mg/dl. Electrocardiogram (ECG) showed normal sinus rhythm but axis deviations. The chest skiagram (CXR) was unremarkable (Fig. 1). Echocardiogram revealed dextrocardia, TGA and double outlet right ventricle (DORV),

large sub-aortic ventricular septal defect (VSD) with bi-directional shunt, severe infundibular pulmonary stenosis (PS) and dilated right atrium and RV (Fig. 2).

**Case 2**

A 24-year-old known CHD was referred to our hospital with early labor pain. She had past history of Blalock Tausig shunt done 7 years ago but without correction of TGAs. Physical examination revealed clubbing, central cyanosis, grade 2/6 ESM and room air saturation of 60%. She had Hb of 16.5 g/dl, normal renal and coagulation profiles. Her blood gas analysis showed pH of 7.52, pCO<sub>2</sub> 19.4 mmHg, pO<sub>2</sub> of 69 mmHg, BE of -4.2 and bicarbonate of 20.9 on 5liters/min oxygen flow. Her La<sup>-</sup> level was 23.9 mg/dl. Echocardiogram revealed d-TGA, VSD with bi-directional shunt, severe PS with peak gradient across the valve 90 mmHg and dilated right atrium and RV. She had OS-atrial septal defect (ASD) with shunt across (Fig. 2).

At admission, ultra-sonogram showed Intra Uterine Growth Retardation (IUGR) of the fetus in both of these patients and oligohydromniosis in case 1. While the decision to terminate the pregnancy was taken in maternal interest, vaginal delivery was preferred over a caesarian section in view of the surgical risks involved and a favorable utero-fetal environment in both patients. Lumbar epidural analgesia was planned for labor and delivery. Prostaglandin E<sub>1</sub> (PGE<sub>1</sub>) assisted labor induction was done under infective endocarditis prophylaxis in both. Uterine, fetal and patient's cardiovascular monitoring were carried out. A second PGE<sub>1</sub> was instituted after cervical dilatation failure, 6 h after the first in case 1. When signs of labor progression were noted, a lumbar epidural catheter was inserted at the level of L<sub>3-4</sub> using air-syringe loss of resistance technique in sitting position in both cases. Co-loading of 200 ml of ringer lactate and supine-lateral tilt position were simultaneously instituted. A radial artery catheter was used for hemodynamic monitoring in both patients.

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