LETTER TO THE EDITOR

Transient Isolated Right Ventricular Hypertrophy in a Newborn

The Editor,

Transient right ventricular hypertrophy (RVH) is an uncommon condition, which is seen during the newborn period. Metabolic and heredofamilial diseases, maternal diabetes, acute perinatal distress, dexamethasone therapy in premature newborns for bronchopulmonary dysplasia and premature closure of ductus arteriosus may lead to transient RVH in the neonatal period (1, 2). Intrauterine ductal constriction can also cause tricuspid and pulmonary regurgitation, RV dysfunction, and subsequently, persistent pulmonary hypertension of the newborn (3, 4). Although the cause of the premature closure of the ductus arteriosus is not fully clear, it usually arises from maternal ingesting of non-steroid anti-inflammatory drugs (NSAIDs) or polyphenol rich foods (PRFs) during pregnancy (5).

Herein we have reported a case of transient-isolated RVH in a newborn because of its rarity and we wanted to attract attention about the importance of pregnant nutrition.

A 1-day-old female infant was referred to our neonatal intensive care unit with respiratory distress. She was born at the 40th week of gestation from consanguineous parents, via caesarean section because of recurrent caesarean delivery with a birth weight of 3000 g. The Apgar scores at 1 and 5 minutes were 6 and 8, respectively. There was a history of maternal ingesting of NSAID (diclofenac potassium) and PRFs (herbal tea) in the third trimester of pregnancy. The foetal distress was not detected. There was no history of maternal diabetes mellitus and hypertrophic cardiomyopathy in siblings. On admission, physical examination revealed respiratory distress mildly. The oxygen saturation level revealed mild respiratory distress was over 90%. There were no differences between preductal and postductal oxygen measurements.

Arterial blood gas analysis, complete blood count, serum glucose, calcium, liver and renal function tests were all within normal limits. Administration of 40% oxygen therapy inside the incubator was commenced to the infant, and it was discontinued after respiratory distress improved on the 2nd day of life. Chest X-ray was normal, and electrocardiograms revealed signs of RVH; also, echocardiographic examination (Fig. 1) was performed on day 1 following the admission, which showed severe RVH (wall thickness of 11 mm in diastole).

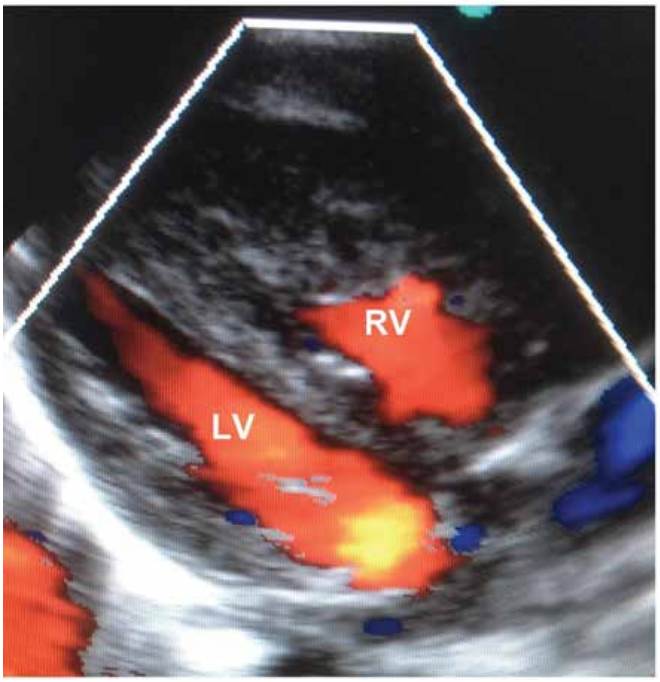

Fig. 1: Echocardiogram obtained on the 1st day of life; apical four-chamber view showed massive right ventricular hypertrophy with a reduced right ventricular cavity and a normal LV.
RV = right ventricle; LV = left ventricle.

No patent ductus arteriosus was identified, and the aortic arch was unobstructed. Color Doppler was normal in terms of tricuspid regurgitation and persistent pulmonary hypertension. The other echocardiographic findings of heart were all normal. Tandem mass, thyroid function tests and fundus examination were normal for metabolic diseases. After 10 weeks following the birth, complete resolution of RVH was demonstrated via echocardiography without any treatment (Fig. 2).

Transient-isolated RVH has a good prognosis compared to primitive hypertrophic cardiomyopathies developing in newborns and it improves in 8–10 weeks without any medication. Although it is a rare presentation, a detailed NSAID medications or PRF consumption history during the pregnancy should be taken in these infants.

DOI: 10.7727/wimj.2016.078

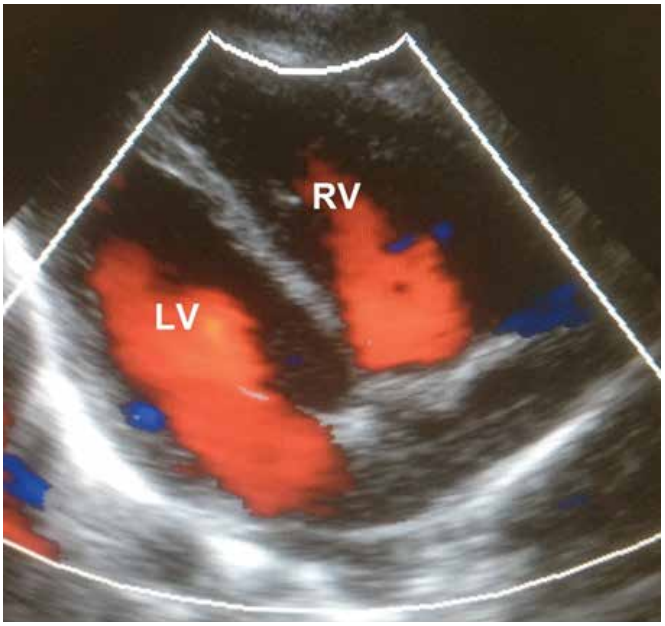

Fig. 2: Ten weeks later, apical four-chamber view revealed the resolution of right ventricular hypertrophy with colour echocardiography.
RV = right ventricle; LV = left ventricle.

Keywords: Ductus arteriosus, newborn, right ventricular hypertrophy, transient

O Ilhan[1], S Akbay[2], SA Ozdemir[3], S Memur[1], B Kanar[1], AR Bakiler[4]

From: [1]Department of Neonatology, Tepecik Training and Research Hospital, Yenisehir, Izmir, Turkey, [2]Department of Neonatology, Faculty of Medicine, Katip Celebi University, Izmir, Turkey, [3]Department of Neonatology, Dr Behcet Uz Children's Hospital, Izmir, Turkey and [4]Department of Pediatric Cardiology, Tepecik Training and Research Hospital, Izmir, Turkey.
Correspondence: Dr O Ilhan, Department of Neonatology, Tepecik Training and Research Hospital, Yenisehir, Izmir, Turkey.
Email: ozkanilhan-83@hotmail.com

REFERENCES

1. Karatas Z, Sap F, Karaarslan S, Alp H, Altın H, Baysal T. Transient isolated right ventricular hypertrophy in a neonate. Turkish J Pediatr Dis 2013; **7:** 44–6.
2. Del Pasqua A, Iadanza A, Pierli C. Unexplained severe transient hypertrophy of the right ventricle in a newborn. J Carciovasc Med (Hagerstown) 2007; **8:** 311–2.
3. Gewillig M, Brown SC, De Catte L, Debeer A, Eyskens B, Cossey V et al. Premature foetal closure of the arterial duct: clinical presentations and outcome. Eur Heart J 2009; **30:** 1530–6.
4. Kapadia V, Embers D, Wells E, Lemler M, Rosenfeld CR. Prenatal closure of the ductus arteriosus and maternal ingestion of anthocyanins. J Perinatol 2010; **30:** 291–4.
5. Alp H, Karatas Z, Baysal T. Transient severe ısolated right ventricular hypertrophy in neonates. J Clin Neonatol 2014; **3:** 161–3.