diagnosed with tonsillitis and prescribed antibiotics. Because of persistent fever, the physician referred him to our hospital. The results of the laboratory tests conducted were as follows: hemoglobin: 12 g/dl, white blood cell (WBC): 16.700 mm^3, thrombocyte: 820.000 mm^3, erythrocyte sedimentation rate (ESR) 125 mm/h, C-reactive protein (CRP): 84 mg/dl. All viral markers were negative. Two-dimensional echocardiogram was normal. He was diagnosed with IKD and therefore administered 2 gr/kg single dose intravenous immunoglobulins (IVIG) and 3 mg/kg aspirin. Rapid improvement of the general condition and disappearance of fever were observed two days later.

Case 2. A four-year-old boy had fever and abdominal pain for 5 days. He was diagnosed with urinary infection at another hospital. Because of fever and presence of jaundice, he was diagnosed with viral hepatitis and transferred to our hospital. Hematological findings were as follows; Hb: 9.6 g/dl, WBC: 8.000 mm^3, thrombocyte: 245.000 mm^3, ESR: 115 mm/h, CRP: 200mg/dl, AST/ALT: 124-240 IU/L, total/conjugated bilirubin: 5.2 -3.2 mg/dl, excess leukocyte in the urine exam. All viral markers and cultures were negative. Echocardiogram was normal. The diagnosis was IKD, so the patient was administered 2gr/kg IVIG and 3 mg/kg aspirin. After the administration of IVIG, fever disappeared. Three days later, maculopapular rash was observed in the perineal area with desquamation. After 6 days, biochemistry values were normalized.

The IKD may display different symptoms such as jaundice like in the second case. Rash, which was not present at the beginning, may be easily confused with the drug eruptions, just like in the first case. Sterile pyuria may be mistaken for partially treated urinary tract infection with sterile urine cultures like in the second case.

Kawasaki Disease Research Committee published new diagnostic criteria in 2002 (3). Major alterations are interpretation of cases with 4 or fewer febrile days shortened by early IVIG treatment and the importance of IKD. Cases with 4 or less febrile days shortened by early IVIG treatment were proposed to be equivalent to cases with 5 or more febrile days in the previous criteria (4). Then, the American Heart Association published the latest diagnostic criteria and the importance of IKD was emphasized in this guide. The conventional diagnostic criteria should be viewed as guidelines that are particularly useful in preventing overdiagnosis but may result in failure to recognize incomplete forms of illness.

Ümit Çelik, Emre Alhan, Filiz Arabacı*
From Departments of Pediatric Infection and
***Family Medicine, Faculty of Medicine, Çukurova University, Adana, Turkey**

References

1. Burns JC, Glode MP. Kawasaki syndrome. Lancet 2004; 364: 533-44.
2. Newburger JW, Takahashi M, Gerber MA, Gewitz MH, Tani LY, Burns JC, et al; Committee on Rheumatic Fever, Endocarditis, and Kawasaki Disease, Council on Cardiovascular Disease in the Young, American Heart Association Diagnosis, Treatment, and Long-Term Management of Kawasaki Disease. A Statement for Health Professionals from the Committee on Rheumatic Fever, Endocarditis and Kawasaki Disease, Council on Cardiovascular Disease in the Young, American Heart Association. Circulation 2004; 110: 2747-71.
3. Ayusawa M, Sonobe T, Uemura S, , Ogawa S, Nakamura Y, Kiyosawa N, et al; Kawasaki Disease Research Committee. Revision of diagnostic guidelines for Kawasaki disease (the 5th revised edition) Ped Int2005; 47: 232-4.
4. Newburger JW, Taubert KA, Shulman ST, Rowley AH, Gewitz MH, Takahashi M, et al. Summary and abstracts of the Seventh International Kawasaki Disease Symposium: December 4-7, 2001, Hakone, Japan. Pediatr Res 2003; 53: 153-7.
5. Burns JC, Wiggins JWJr, Toews WH, Newburger JW, Leung DY, Wilson H, et al. Clinical spectrum of Kawasaki disease in infants younger than 6 months of age. J Pediatr 1986; 109: 759-63.

Address for Correspondence: Dr. Ümit Çelik, Çukurova University Faculty of Medicine, Pediatric Infection Department, Adana, Turkey
Phone: +90 322 338 60 60/ 3372 Fax:+90 322 338 68 32 E-mail: ucelik@cu.edu.tr

Transposition of the great arteries in a newborn whose mother was treated with carbamazepine during pregnancy

Gebelikte karbamazepin kullanan annenin bebeğinde büyük arter transpozisyonu

A male infant born by cesarean section from the first pregnancy of a 26-year-old mother as the first living child on the 38th gestational week with a birth weight of 2800 gram, and followed-up at the hospital of birth for cyanosis following birth for three days was referred to our hospital when he was 14 days old due to continuing cyanosis. There was no relevant family history for consanguinity or congenital heart disease. The mother was epileptic and did not have any maternal history of interest except for one seizure and carbamazepine usage during pregnancy. There was no maternal gestational diabetes. The baby's antenatal follow-up and fetal echocardiography had been normal.

Physical examination revealed a body temperature of 36.5°C, apical heart rate of 130/min, respiratory rate of 38/min and a body weight of 2550 grams. The only positive finding was cyanosis with normal cardiac and respiratory findings. Blood gas analysis revealed a PaO2 value of 40 mmHg. There was no significant change in the oxygen saturation following 100% oxygen administration. Anteroposterior chest X-ray showed egg-shaped heart with narrowing of the mediastinum and mild cardiomegaly (Fig. 1). Echocardiography showed transposition of the great arteries (TGA) and the patient was referred to another center for surgery.

As maternal seizures during pregnancy are associated with an increased risk of miscarriage, preterm labor, intracranial hemorrhage in the fetus, stillbirth, and possible developmental or learning difficulties; control of seizures with maintaining appropriate anticonvulsant therapy during pregnancy is essential. (1). Many of the antiepileptic drugs are established teratogens. The risk of birth defects in offspring of mothers who have seizure disorders treated with antiepileptic drugs is two to three times that of the general population (1,2). The factors causing this increase are not well defined (1). The risk of malformations has been shown to be higher following exposure to anticonvulsant drugs during polytherapy than for monotherapy. Carbamazepine is the first choice for monotherapy in an epileptic mother during pregnancy. Although many authors have suggested that carbamazepine is not a teratogen and it is the first choice for women who require an anticonvulsant during pregnancy, some studies have shown that carbamazepine is associated with major malformations (3, 4). Carbamazepine is a folic acid antagonist and increases the risk of

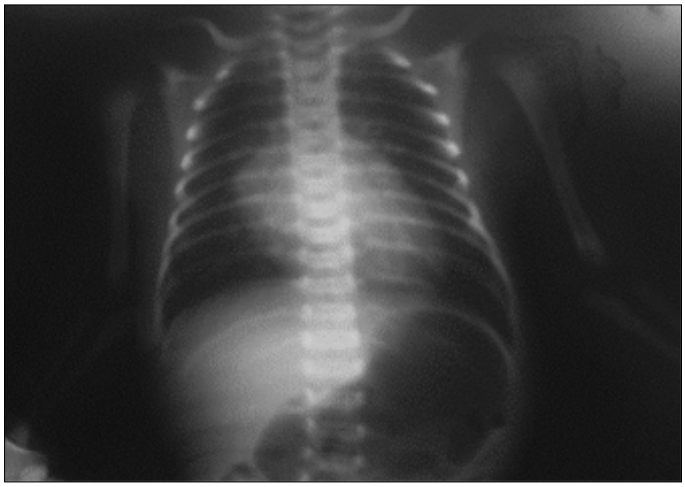

Figure 1. Anteroposterior chest X-ray shows mild cardiomegaly, narrow mediastinum and normal pulmonary blood flow

neural-tube defects and cardiovascular defects. Cardiac malformations were also found to be associated with carbamazepine as polytherapy (2, 3). One case has been reported with carbamazepine usage as monotherapy during pregnancy where the child was diagnosed with transposition of the great arteries and atrial septal defect following birth (5).

When evaluated with the previously reported case, our case suggests that the concurrence of carbamazepine usage, thought to be reasonably safe as monotherapy during pregnancy, and TGA development is not coincidental. It would be prudent to suggest an association between the various drugs and this malformation, though it is clear that two cases do not make the association casual and more extensive studies are required. However, we feel that keeping the concurrence of cardiac malformations in mind in epileptic pregnant mothers using carbamazepine would be prudent.

Our aim was to draw attention to the rare concurrence of maternal usage of carbamazepine, and cardiac anomaly in the child by presenting a case.

Emine Dibek Mısırlıoğlu, Didem Aliefendioğlu,
M. Tolga Doğru*, Cihat Şanlı, Ayla Oktay,
From Departments of Pediatrics and *Cardiology, Faculty of Medicine
Kırıkkale University, Kırıkkale, Turkey

References

1. Boyle RJ. Effects of certain prenatal drugs on the fetus and newborn. Pediatr Rev 2002; 23: 17-23.
2. Arpino C, Brescianini S, Robert E, Castilla EE, Cocchi G, Comel MC, et al. Teratogenic effects of antiepileptic drugs: Use of an International Database on Malformations and Drug Exposure (MADRE). Epilepsia 2000; 41: 1436-43.
3. Jones KL, Lacro RV, Johnson KA, Adams J. Pattern of malformations in the children of women treated with carbamazepine during pregnancy. N Engl J Med 1989; 320: 1661-6.
4. Ornoy A, Cohen E. Outcome of children born to epileptic mothers treated with carbamazepine during pregnancy. Arch Dis Child 1996; 75: 517-20.
5. Grupta G, Bansal A, Singh M. Antenatal carbamazepine use associated with d-TGA and ASD. Indian Pediatrics 2002; 39: 101-2.

Address for Correspondence: Dr. Emine Dibek Mısırlıoğlu
Basın cad. Seçil Sitesi 63/23 Basınevler 06120 Ankara, Turkey
Fax: +90 318 225 28 19 E-mail: edibekm@yahoo.com

Correctable causes of left ventricular outflow tract obstruction may not be absolute contraindications for arterial switch operation

Sol ventrikül çıkış yolu obstrüksiyonu arteryel "switch" operasyonu için engel midir?

Dear Editor,

Transposition of the great arteries (TGA) is one of the most common congenital heart anomaly. About 20% of TGA cases have a large or small ventricular septal defect (VSD). Only 5% have associated anatomic left ventricular outflow tract obstruction (LVOTO) (1).

We emphasize that the arterial switch operation (ASO) is the best option for all patients with TGA if there is no absolute contraindication. A presence of LVOTO in TGA led surgeons to use a Mustard, Senning, Rastelli or REV procedures. In recent studies fibrosis was diagnosed with cardiac magnetic resonance imaging with Gadolinium in the right ventricle of some patients who underwent Mustard or Senning operation for the treatment of the TGA, fibrosis may be cause of severe ventricular arrhythmias due to ventricular repolarization anomaly (2).

Excellent long term results are obtained in operative survivors following the arterial switch operation (3). Reoperation incidence in patients who underwent successful primary anatomic repair is lesser than other operative procedures which are available for treatment of TGA. The advantages of arterial switch operation also include anatomic correction of ventriculoarterial connection, minimal prosthetic material load, and avoidance of extracardiac conduit (4).

Arterial switch operation must also be the first preference in patients with TGA having LVOTO due to correctable causes (5). In this case, we considered subpulmonary fibromuscular tissue, which causes LVOTO, is correctable with resection. We herein report an application of this approach; ASO in a case of TGA with a malaligned VSD and LVOTO caused by subpulmonary fibromuscular tissue and bicuspid pulmonary valve.

A 1-year-old male, with cyanosis since birth, was admitted to our institute with diagnosis of TGA, VSD and severe pulmonary stenosis. Two-dimensional echocardiography demonstrated a single moderate size non-restrictive VSD with posterior outlet septal malalignment and subpulmonic fibromuscular tissue (Fig. 1, 2) accompanied by severe

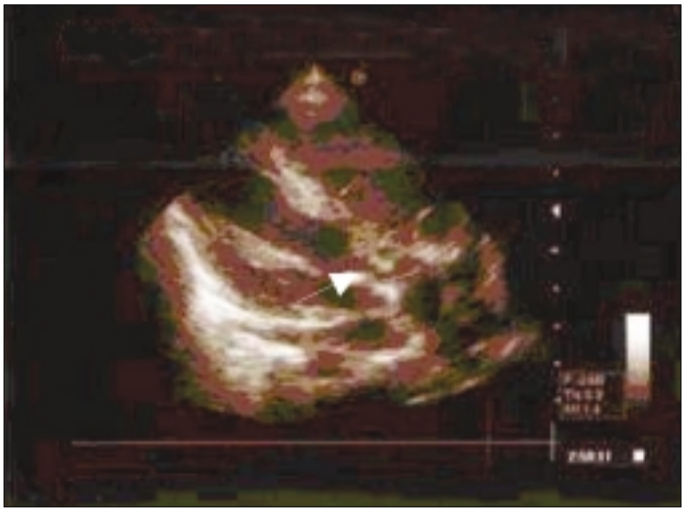

Figure 1. Preoperative 2D echocardiogram shows LVOTO due to subpulmonary fibromuscular tissue (white arrow)
LVOTO- left ventricular outflow tract obstruction

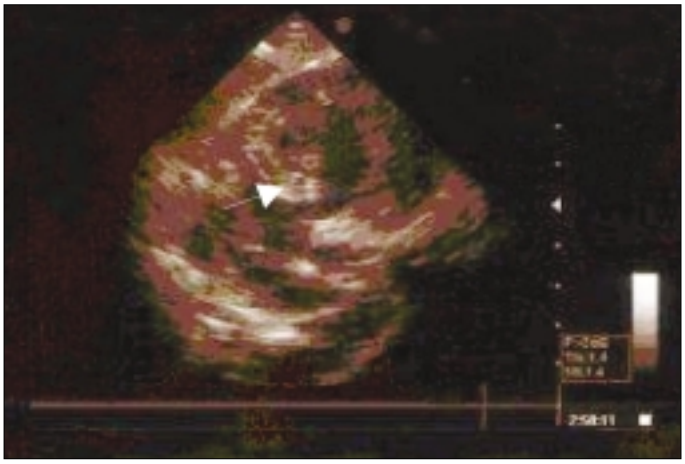

Figure 2. Preoperative 2D echocardiogram shows anterior malaligned ventricular septal defect