J Inherit Metab Dis (2013) 36:1085
DOI 10.1007/s10545-013-9644-9

LETTER TO THE EDITORS

Noncompaction of the ventricular myocardium and hydrops fetalis in cobalamin C disease

Response to letter "Disappearance of congenital noncompaction in hereditary cobalamin-C-deficiency 2.5 years after birth" by J. Finsterer and Claudia Stöllberger, DOI 10.1007/s10545-013-9612-4

Pranoot Tanpaiboon · Charles P. Venditti

Received: 5 July 2013 / Accepted: 12 July 2013 / Published online: 22 August 2013

We reported the first patient with early onset cobalamin C disease (*cbl*C) who presented with non-immune hydrops fetalis, who also had left ventricular noncompaction (LVNC) and heart failure in the neonatal period. After metabolic management and ionotrophic support, her left ventricular function improved. At 30 months, the last age of evaluation at our center, the apex of the left ventricle was globular but cardiac function was within normal limit on digoxin therapy. A cardiac MRI to more precisely characterize the ventricular myocardium has not yet been performed. Although beyond the scope of a case report, the questions raised regarding theoretical explanations for the natural history and disease course of LVNC in *cbl*C and also relationship of LVNC to other neuromuscular disorders such as Duchenne's muscular dystrophy are intriguing and will remain as challenges for future research.

Drs. Finsterer and Stöllberger affirm that "LVHT in cobalamin-C deficiency was found only in a limited number of patients with a specific mutation". We disagree with this statement. The only systematic echocardiographic survey of cardiac disease in a cohort of *cbl*C patients was reported by Profitlich et al (2009) in a small group of ten patients: three patients (33 %) had LVNC. Of specific relevance to Drs. Finsterer and Stöllberger's comment is that the three patients with LVNC reported by Profitlich et al harbored a total of four distinct *MMACHC* mutations, suggesting that there is not a specific mutation seen in the reported *cbl*C patients with LVNC.

LVNC is recognized as a genetically heterogeneous disease, associated with variable clinical symptoms (Ichida 2009). We offered a hypothesis to explain a possible correlation between LVNC and *cbl*C disease, not a statement of causal relationship as claimed by Drs. Finsterer and Stöllberger, but do agree that definitive studies examining LVNC in the setting of MMACHC deficiency need to be rigorously assessed. The detailed cardiovascular and echocardiographic characterization of larger numbers of *cbl*C patients, with an extension into relevant animal models, would be one approach to assess the relationship between MMACHC deficiency and LVNC exists.

Conflict of interest None.

Communicated by: Verena Peters

P. Tanpaiboon
Division of Genetics and Metabolism, Children's National Medical Center, Washington, DC 20010, USA

C. P. Venditti (✉)
Organic Acid Research Section, Genetics and Molecular Biology Branch, National Human Genome Research Institute (NHGRI), National Institutes of Health (NIH), Bethesda, MD 20892, USA
e-mail: venditti@mail.nih.gov

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