for the highest prevalence of MA+ in patients with congenital heart disease and an obligate right-to-left shunt, which resulted in secondary polyglobulia.

However, we have to take into account that our data are based on a small population of a single centre and that both selection and recall bias might be present.

We can conclude that the aetiology of migraine remains an enigma; however, we would like to emphasise that the origin, as well as the facilitating factors, of attacks is multifactorial.

Authors' affiliations

Hadewich Hermans, Martijn C Post, Werner I H L Budts, Department of Cardiology, University Hospital Gasthuisberg, Leuven, Belgium

Vincent Thijs, Department of Neurology, University Hospital Gasthuisberg, Leuven, Belgium

Marijke Spaepen, Department of General Practice, Westmeerbeek, Belgium

Competing interests: None declared.

Correspondence to: Dr W Budts, Department of Cardiology, University Hospital Gasthuisberg, Herestraat 49, B-3000 Leuven, Belgium; werner.budts@uz.kuleuven.ac.be

Accepted 14 September 2006

REFERENCES

- 1 Wilmschurst P, Nightingale S. Relationship between migraine and cardiac and pulmonary right-to-left shunts. *Clin Sci (Lond)* 2001;**100**:215–20.
- 2 Wilmschurst PT, Nightingale S, Walsh KP, et al. Effect on migraine of closure of cardiac right-to-left shunts to prevent recurrence of decompression illness or stroke or for haemodynamic reasons. *Lancet* 2000;**356**:1648–51.
- 3 Aamodt AH, Borch-Johnsen B, Hagen K, et al. Headache prevalence related to haemoglobin and ferritin. The HUNT Study. *Cephalalgia* 2004;**24**:758–62.
- 4 Dreier JP, Kleeberg J, Petzold G, et al. Endothelin-1 potentially induces Leao's cortical spreading depression in vivo in the rat: a model for an endothelial trigger of migrainous aura? *Brain* 2002;**125**:102–12.
- 5 Wilmschurst PT, Pearson MJ, Nightingale S, et al. Inheritance of persistent foramen ovale and atrial septal defects and the relation to familial migraine with aura. *Heart* 2004;**90**:1315–20.

IMAGES IN CARDIOLOGY

doi: 10.1136/hrt.2006.094284

Aberrant origin of the left coronary artery from the right-facing sinus of Valsalva with intramural course: preoperative and postoperative imaging

A 15-year-old boy experienced sudden shortness of breath during physical activity (European soccer game). On admission to hospital, he presented with pulmonary oedema, monomorphic premature ventricular contractions and signs of an anterolateral myocardial infarction on the electrocardiogram. Troponin I was elevated to 56.5 ng/l. Treatment with lidocaine, furosemide and isosorbide dinitrate led to rapid resolution of symptoms. Transthoracic echocardiography showed an aberrant origin of the left anterior

descending (LAD) coronary artery from the right-facing sinus of Valsalva (panel A). This finding was confirmed by a gadolinium-enhanced magnetic resonance imaging study (panel B). A myocardial technetium scan showed a small perfusion defect near the apex of the left ventricle. The LAD coursed intramurally between the two major arteries. Surgical treatment consisted of unroofing of the LAD to the left sinus of Valsalva. An electrophysiological study was performed 2 weeks after the operation to exclude inducible

life-threatening ventricular tachycardia. Postoperative magnetic resonance imaging showed an unobstructed origin of the LAD from the left facing sinus from Valsalva (panel C). In summary, transthoracic echocardiography can accurately depict this rare anomaly and hence is the ideal screening tool. In patients with symptoms treatment is warranted.

A Eicken, M Vogt, B Marinovic, H Stern
eicken@dhm.mhn.de

Transthoracic echocardiogram of a 15-year-old boy with aberrant origin of the left coronary artery with intramural course.

Gadolinium-enhanced magnetic resonance image depiction of the anomaly previous to surgery. The left anterior descending coronary artery has an abnormal intramural course between the aorta and pulmonary artery.

After surgical unroofing, the left anterior descending coronary artery originates without potential obstruction from the left facing sinus of Valsalva.