system might allow the study of the biophysical properties or the trafficking of an ion channel, it is not suitable to study the effect of mutations or treatments on the most relevant parameter, which is the duration of the cardiac action potential. Not all components that modulate this parameter in a human cardiomyocyte are known, which makes it hard to predict the effect of specific interventions. For example, the mother of the LQT2 patient, who also carries the heterozygous A561T mutation in the KCNH2 gene, has no symptoms of LQTS and a much shorter QT interval than her daughter. The use of hiPSC-derived cardiomyocytes offers the unique possibility to study the effect of a disease-causing mutation, and to develop therapies, in a patient-specific genetic background.

Conflict of interest: none declared.

References

CARDIOVASCULAR FLASHLIGHT

Mitral cleft repair by mitraclipping

Hendrik Martinus Willemsen*, Ad van den Heuvel, Remco Schurer, Joost van Melle, and Eshan Natour

Department of Cardiology, University Medical Centre Groningen, Groningen, the Netherlands
* Corresponding author. Tel: +31 505247392, Fax: +31 505245800, Email: h.m.willemsen@umcg.nl

We present a case of a 51-year-old male patient with severe mitral regurgitation and a dilated left ventricle with a poor function (LVEF 15%). The mitral regurgitation initially was considered to be due to annular dilatation and malcoaptation. Mitral surgery was considered too risky. The patient was accepted for mitraclip treatment. In this procedure, a posterior leaflet cleft was objectted with three-dimensional trans oesophagal echocardiography. The regurgitation orifice was located at the cleft location, and was the cause of mitral-insufficiency. Mitraclips are made to be placed perpendicular on the leaflets, and cannot be placed on a cleft, which is itself perpendicular on the mitral closure orifice. Because surgical edge-to-edge mitral repair has been successful in a mitral cleft, we decided to do likewise with mitral clips. The first mitraclip was placed posteromedial right along the cleft, but did not reduce the mitral-insufficiency enough. There was a reduction of the mitral-insufficiency in the cleft, but a new mitral-insufficiency emerged in the more anterolateral closure. A second mitraclip was placed close to the cleft on the anterolateral side in a symmetrical fashion. This resulted in two left ventricular inflow orifices, while in between the clips the cleft was closed. Near complete reduction of the mitral-insufficiency was achieved without significant mitral stenosis.

This is the first report of feasibility of a mitraclip closure of a cleft, essentially by placing two mitraclips symmetrically in close proximity at both sides of the cleft perpendicular to the mitral closure orifice.

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