

Media release

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Customisable heart valve “seal”

Heart valve diseases in advanced age are frequent and require customised therapeutic options. A new development in this field has been used for the first time worldwide at Inselspital, Bern University Hospital. Its Department of Cardiology has now evaluated the first international patient data.

More and more people are fulfilling the wish for an active lifestyle into old age. But the societal trend is proceeding to the detriment of the heart, because use over the course of many years can render the mitral valve (the valve between the left atrium and the left ventricle) leaky. As a result, the heart has additional work due to the backlog of blood. Shortness of breath and inefficiency come about. Almost ten percent of the population over 75 years of age is affected. The development of safe and gentle treatment options for elderly patients with the shortest possible hospital stay is therefore a crucial challenge of contemporary cardiology.

When open heart surgery is out of the question

The optimal treatment of mitral valve diseases is still open heart surgery. But this major intervention poses a risk for many elderly patients because concomitant diseases often exist. As an alternative, the valve can be treated with a catheter through the groin in a minimally invasive (keyhole) procedure. Today cardiologists insert a clip here that repairs the leaking mitral valve. But the clip cannot be inserted with all patients, especially if the heart valve is severely altered.

A new American reconstruction system now has the potential to remedy this restriction. It also comes into question with such anatomically altered heart valves which could not be treated by means of catheter up to now. Cardiologists hope for a reduction in the number and duration of hospital stays and an improved quality of life for those affected.

First use at Bern University Hospital

The Departments of Cardiology and of Cardiovascular Surgery at Bern University Hospital are internationally renowned in the development of gentle and innovative treatment procedures for patients with heart valve diseases. Due to this reputation the new system was used for the first time worldwide in September 2016 at Inselspital, Bern University Hospital. Seven heart valve centres from five different countries (Germany, Greece, Canada, USA and Switzerland) subsequently verified the safety and feasibility of the procedure among elderly persons.

The evaluation of patient data under the leadership of Prof. Dr. med. Stephan Windecker at Bern University Hospital revealed that the new system can be used reliably among patients who were difficult to treat with available techniques. In addition, it closed the leaking mitral valve very effectively: 95 percent of patients indicated a noticeable improvement of their complaints after the procedure. These promising results will now be confirmed in long-term studies with a larger patient population before the new system can be approved. The initial evaluation was published on 19 August in “The Lancet”.

Study link:

[Compassionate use of the PASCAL transcatheter mitral valve repair system for patients with severe mitral regurgitation: a multicentre, prospective, observational, first-in-man study](#)

The Lancet, 19 August 2017

Caption:

[Starting from an inguinal vessel, the newly developed implant is introduced into the left atrium of the heart and placed at the site of the mitral valve leakage. The regurgitation from the left ventricle into the left atrium and thus the additional function of the heart is impeded as a result.](#)

(Illustrations: Department of Cardiology, Inselspital, Bern University Hospital)

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