

Abstract No. **56**

Category: **Valvular Heart Disease**

Title: **Transapical approach for treatment of mitral insufficiency without CPB:  
Experimental study in swine**

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**Abstract:**

Mitral insufficiency is a pathology that affects more than 10% of the population over 75 years old, with high morbidity and mortality. The MitraClip technique presents promising results, but high cost and high complexity for reproducibility to the great majority of the patient population in our country.

The transapical access of the LV has become widely used in TAVI and is in direct anatomical relation to mitral valve procedures. The objective is the experimental development of the Transapical technique with access to the mitral valve for the treatment of mitral insufficiency in swine.

Methods: Experimental study in pigs with the correction of mitral valve insufficiency through the union of the anterior and posterior leaflets with a polymer clip, having as surgical access the apex of the left ventricle. The first stage of the project (ex vivo) consisted in the accomplishment of an anatomical study, using 5 hearts drawn from Landrace pigs (with average weight of 50kg). Transapical access was performed with the introduction of an introducer (thoracic drain # 26) followed by introduction of the clipper with the clip (both Hem-o-lok, Endo5®). After the left atrial incisions, it was possible to observe the transformation of the single double orifice (Alfiere). In the next stage (in vivo) a Landrace pig weighing 22 kg was used. After anesthesia, an incision was made in the 5th left intercostal space in the anterior hemiclavicular line, obtaining access to the apex of the left ventricle with suture in the LV bag, passage of the Braille Inovare nº 24 introducer with access to the mitral valve.

Results: Clipping of the mitral valve leaflets was performed using a Hemo-o-lok clipper and Endo5® clip. The entire procedure was performed guided by 2D transthoracic echocardiography. Results: The transapical procedure ensured a direct and simple access to the mitral valve making possible its clipping guided by the bidirectional echocardiogram.

Conclusion: The accuracy of clipping is dependent on transesophageal 3D echocardiography. The new technique, which was much easier to reproduce at a lower cost, proved to be viable, still dependent on the accuracy of the clipping site in the mitral valve, with the aid of transesophageal 3D echocardiography, not yet available at this stage of the experiment and the improvement of the Hem clip -o-lok, Endo5® used.