

Transapical Mitral Implantation of Artificial Chordae Tendineae: An in vivo animal study

huanlei huang¹, Lishan Zhong¹, Zhenzhong Wang², Shuo Xiao², Dou Fang², yanchen yang³,
Qiuji Wang², Qizong Xie⁴, Xusheng Zhang⁴, and Haiming Wu⁴

¹Guangdong Cardiovascular Institute

²Guangdong Provincial People's Hospital

³First People's Hospital of Foshan

⁴Covestro Polymers Shenzhen Co Ltd

October 11, 2022

Abstract

Background This study investigated the feasibility of a novel preformed artificial chordae tendineae(ACTs) implantation device (Halochord) for mitral valve repair(MVP) via apical access. **Methods** Nine pigs were randomly divided into three groups: A, B, and C, and survived for 1, 3, and 6 months after surgery, respectively. The ACTs were anchored in the leaflet through Halochord, adjusted to the correct length to cause moderate MR guided by echocardiography, and secured at the epicardium. Echocardiography was used to assess hemodynamic data and valve function. Surviving pigs were killed at the end of the follow-up period to confirm the deployment of ACTs. **Results** The modeling was successful, with no operative mortality. According to the echocardiographic and the cardiac anatomical specimen, all ACT implantation sites were found in the P2 region of MV. No rupture of the ACTs was detected during the observation period. Additionally, the ACTs gradually internalized as time passed, particularly at their extremities. **Conclusions** We demonstrated that off-pump ACTs implantation from the LV apex is a feasible and reproducible procedure.

Hosted file

Transapical Mitral Implantation of ACT An animal study.docx available at <https://authorea.com/users/361500/articles/589887-transapical-mitral-implantation-of-artificial-chordae-tendineae-an-in-vivo-animal-study>





