



ELSEVIER

Available online at

ScienceDirect

www.sciencedirect.com

Elsevier Masson France

EM|consulte

www.em-consulte.com/en



CLINICAL RESEARCH

Multimodality imaging guidance for percutaneous paravalvular leak closure: Insights from the multi-centre FFPP register

Imagerie multi-modalités des fuites paravalvulaires: données de l'observatoire multicentrique FFPP

Sébastien Hascoet^{a,*}, Grzegorz Smolka^b,
Francois Bagate^{c,d}, Julien Guihaire^a, Agathe Potier^a,
Khaled Hadeed^e, Yoan Lavie-Badie^f,
Hélène Bouvaist^g, Claire Dauphin^h, Fabrice Bauerⁱ,
Mohammed Nejjari^j, Remy Pillière^c, Eric Brochet^k,
Lionel Mangin^l, Guillaume Bonnet^m, Vlad Ciobotaruⁿ,
Guillaume Leurent^o, Najib Hammoudi^p,
Adel Aminian^q, Clement Karsenty^{e,f,r},
Christian Spaulding^r, Sebastien Armero^{s,t},
Frederic Collet^s, Didier Champagnac^u,
Julien Ternacle^d, Martin Kloeckner^a,
Benoit Gerardin^a, Marc-Antoine Isorni^a

^a Faculté de médecine Paris-Sud, hôpital Marie-Lannelongue, université Paris-Sud, Paris-Saclay, 92350 Le Plessis-Robinson, France

^b Department of cardiology, medical university of Silesia, 40055 Katowice, Poland

^c Centre de réanimation et d'intervention cardio-vasculaire, clinique Ambroise-Paré, 92200 Neuilly-sur-Seine, France

^d Hôpital Henri-Mondor, cardiologie, Assistance publique des Hôpitaux de Paris, Inserm U955, 94010 Créteil, France

^e Hôpital des enfants, cardiologie pédiatrique, centre hospitalier universitaire de Toulouse, 31059 Toulouse, France

Abbreviations: CT, Computed Tomography; FFPP, Fermeture de Fuite Paraprothétique; IQR, Interquartile Range; MRI, Magnetic Resonance Imaging; PVL, Paravalvular Leak; SD, Standard Deviation; TOE, Transoesophageal Echocardiography.

* Corresponding author at: Pôle de cardiologie pédiatrique et congénitale, hôpital Marie-Lannelongue, 133, avenue de la Résistance, 92350 Le Plessis-Robinson, France.

E-mail address: s.hascoet@hml.fr (S. Hascoet).

<https://doi.org/10.1016/j.acvd.2018.05.001>

1875-2136/© 2018 Elsevier Masson SAS. All rights reserved.

Please cite this article in press as: Hascoet S, et al. Multimodality imaging guidance for percutaneous paravalvular leak closure: Insights from the multi-centre FFPP register. Arch Cardiovasc Dis (2018), <https://doi.org/10.1016/j.acvd.2018.05.001>

^f Hôpital Rangueil, cardiologie, centre hospitalier universitaire de Toulouse, 31059 Toulouse, France

^g Hôpital La Tronche, cardiologie, centre hospitalier universitaire de Grenoble-Alpes, 38700 Grenoble, France

^h Hôpital Gabriel-Montpied, cardiologie, centre hospitalier universitaire de Clermont-Ferrand, 63000 Clermont-Ferrand, France

ⁱ Cardiologie, centre hospitalier universitaire de Rouen, 76031 Rouen, France

^j Centre cardiologique du nord, 93200 Saint-Denis, France

^k Hôpital Bichat, Assistance publique des Hôpitaux de Paris, 75018 Paris, France

^l Cardiologie, centre hospitalier régional, 74370 Annecy-Genevois, France

^m Hôpital Timone, cardiologie, Assistance publique des Hôpitaux de Marseille, 13005 Marseille, France

ⁿ Cardiologie, hôpital Prive-Les-Franciscaines, 30032 Nîmes, France

^o Cardiologie, centre hospitalier universitaire de Rennes, 35000 Rennes, France

^p Hôpital Pitié-Salpêtrière, cardiologie, Assistance publique des Hôpitaux de Paris, 75013 Paris, France

^q Cardiologie, hôpital universitaire de Charleroi, 6042 Charleroi, Belgique

^r Hôpital Européen-Georges-Pompidou, cardiologie, Assistance publique des Hôpitaux de Paris, Université Paris Descartes, Inserm U 970, 75015 Paris, France

^s Cardiologie, hôpital privé Clairval, 13009 Marseille, France

^t Cardiologie, hôpital européen de Marseille, 13003 Marseille, France

^u Cardiologie, clinique du Tonkin, 69100 Villeurbanne, France

Received 1st February 2018; received in revised form 14 May 2018; accepted 15 May 2018

KEYWORDS

Paravalvular leak;
Cardiac valve;
3D echocardiography;
4D-flow MRI

Summary

Background. – Percutaneous paravalvular leak (PVL) closure has emerged as a palliative alternative to surgical management in selected high-risk patients. Percutaneous procedures are challenging, especially for mitral PVL. Accurate imaging of the morphologies of the defects is mandatory, together with precise guidance in the catheterization laboratory to enhance success rates.

Aims. – To describe imaging modalities used in clinical practice to guide percutaneous PVL closure and assess the potential of new imaging tools.

Methods. – Data from the ‘Fermeture de Fuite paraprothétique’ (FFPP) register were used. The FFPP register is an international multi-institutional collaborative register started in 2017 with a retrospective and a prospective part. A descriptive analysis of multimodality imaging used to guide PVL closure in clinical practice was performed.

Results. – Data from 173 procedures performed in 19 centres from three countries (France, Belgium and Poland) were collected, which included eight cases of PVL following transcatheter valve replacement. Transoesophageal echocardiography was used in 167 cases (96.5%) and 3D echocardiography in 87.4% of cases. In one case, 3D-echocardiography was fused with fluoroscopy images in real time using echonavigator software. Details about multimodality imaging were available from a sample of 31 patients. Cardiac computed tomography (CT) was performed before 10 of the procedures. In one case, fusion between preprocedural cardiac CT angiography data and fluoroscopy data was used. In two cases, a 3D model of the valve with PVL was printed. **Conclusion.** – Echocardiography, particularly the 3D mode, is the cornerstone of PVL imaging. Other imaging modalities, such as cardiac CT and cardiac magnetic resonance imaging, may be of complementary interest. New techniques such as imaging fusion and printing may further facilitate the percutaneous approach of PVLs.

© 2018 Elsevier Masson SAS. All rights reserved.

MOTS CLÉS

Fuite
paraprothétique ;

Résumé

Introduction. – La fermeture percutanée des fuites valvulaires paraprothétiques (FPP) est devenue une alternative à la chirurgie chez des patients sélectionnés à haut-risque. Les procédures sont complexes en particulier pour les FPP mitrales. Une imagerie de précision est nécessaire

Download English Version:

<https://daneshyari.com/en/article/8653637>

Download Persian Version:

<https://daneshyari.com/article/8653637>

[Daneshyari.com](https://daneshyari.com)