Service Priorities and Programmes

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Fusion Imaging â€“ EchoNavigator Â® System in Complex Percutaneous Structural Heart Disease (SHD) Interventions

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Introduction

Percutaneous structural heart disease intervention provides an alternative treatment option for patients whose conventional open-heart surgeries deem impossible. The margin of error is little for these procedures. A good intra-procedural imaging is important in order to provide accurate real-time images to guide the procedures.

Objectives

To show the feasibility and outcome of using EchoNavigator Â® system ((Philips Healthcare, Best, The Netherlands) fusion imaging in structural heart disease (SHD) interventions.

Methodology

Since July, 2016, EchoNavigator Â® system, an automatic fusion of real-time 2D/3D trans-esophageal echocardiographic images onto the usual real-time fluoroscopy images was introduced in our SHD interventions. The involved procedures included left atrial appendage occlusion, para-valvular leak closure, percutaneous mitral valve repair etc. All cases were performed under general anesthesia. The fusion images changed with different C-arm angles accordingly. A case of closure of ruptured sinus of Valsalva would be illustrated.

Result

A 33 years old gentleman presented with congestive heart failure and was diagnosed to have ruptured sinus of Valsalva (SoV) aneurysm into right ventricle just beneath the pulmonary valve. Percutaneous closure with vascular plug was done with aid of EchoNavigator during guidewire passing from aortic root via the ruptured sinus of Valsalva into pulmonary artery. The wiring was so smooth and be done in single

attempt. The procedure was finally successful by putting in a 20mm vascular plug II device.
Conclusion: EchoNavigator Â® system is feasible, safe and provide additional anatomical images which fused with the usual X-ray images during the SHD interventions. The system provides more confidence to the operators in targeting the lesions, increases the ease, successful rate of the procedure and decreases the procedural time.