

Role of echocardiography in intervention procedures: Going for the next level

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In the era of the non surgical cardiac intervention procedures, echocardiography has played an important role. In the recent years, the intervention procedures has been more varied and challenging. The numbers of procedures nowadays varied from valves intervention, congenital heart disease intervention and even left heart dimension alteration. Currently, multi modalities imaging approached has been the standard for these procedures. Integrated use of various modalities also in the manner of team approached has been conducted in many distinguished labs.

Echocardiography, since it is one of the oldest imaging modality, has not been left behind in the interventional era. Even so, its role is becoming more important especially since the beginning of 3 dimensional (real time) echocardiography come to real world practice. This modality able to help interventionist to appreciate heart structure in 3-D perspective which important in interventional procedures such as mitral clips.

General use of echocardiography in intervention era are to select candidate, guide the procedure and post procedural evaluation. Since the growing use of transcatheter valve therapies, the needs for echocardiography evaluation also expanding along with it. Echocardiography can be used to guide trans septal puncture, Balloon mitral valvuloplasty, mitral clips, aortic valve intervention, device closure of atrial septal defect/ ventricular septal defect and left atrial occluder procedures. The use of echocardiography has been widely reported and supported by guideline from American Society of Echocardiography as well as European Association of Cardiovascular Imaging. The advantage of using echocardiography such as clear visual of interatrial septal for safe interatrial puncture process, detection of thrombus in heart chamber, guidance for device deployment, direct evaluation of result and quick detection for complication also less use of contrast and x ray.

Recently, complete zero fluoroscopy for interventional procedures are being explored. This method required full echocardiography guidance during the procedures from start to finish. The requirement for this method will be skillful echocardiographer for the intended procedures, good understanding between interventionist and the echocardiographer, proper case selections and interventionist understanding for echocardiography images. Full echocardiography guidance can be an alternative where fluoroscopy exposure should be avoided such as for pregnant women, or small children. The increase number of determined interventionist to do this method will also induced echocardiographer to enhanced their skill so the teamwork can be developed. The numbers for study is needed to evaluate and analyze this method , however this is also evident that echocardiography has reached to the next level in the cardiac interventional era.