

中文題目：對比心臟超音波在左心耳閉合術的術前評估應用

英文題目：Using Contrast Echocardiogram to Clear the Left Atrial Appendage Before Occluder Implantation.

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**Background:** Transesophageal echocardiography (TEE) is performed routinely among patients with atrial fibrillation (AF) in order to exclude left atrial appendage (LAA) thrombus prior to LAA occluder implantation. Because of assessment for LAA thrombus by TEE is operator dependent and sometimes is difficult to exclude the LAA thrombi. We reported a case using an echo contrast to exclude LAA thrombus prior to LAA occluder implantation.

**Case presentation:** A 67-year-old man, with a history long-standing persistent AF (CHADVASc score:5) and repeated embolic events under oral coumadin therapy (cerebellar infarction and embolic myocardial infarction events). He was referred to our hospital for LAA occluder implantation but hold due to suspicion of a thrombus (1.1x1.4 cm) within the LAA. Novel oral anticoagulant (Dabigatran 150 mg bid) was given and then shifted to subcutaneous enoxaparin 6000 u bid for 3 months due to a persistent LAA echodensity (size changed to 1.2 x 0.68 cm). Unfortunately, this echodensity still existed after adequate anticoagulation, contrast echocardiogram was arranged to differentiate the cause of the refractory lesion. DEFINITY echo contrast (Lantheus Medical Imaging, Inc. USA. Perflutren lipid microsphere) was administrated during follow-up TEE examination. Figure 1A shows a hyperechoic lesion within LAA (arrowhead) before contrast injection. There was a complete opacification (Figure 1B) of the LAA after DEFINITY echo contrast, which interpreted as a negative study for LAA thrombus and previous echodensity was probable reverberation related. We then performed LAA occlusion procedure (Figure 1C) smoothly after excluding thrombus without any procedural complication.

**Conclusion:** TEE has been reported to have excellent sensitivity and specificity in the detection of LAA thrombus. However, complex 3D structure of LAA may hide the thrombi; Pectinates muscle from LAA and reverberations from the Coumadin ridge may mistaken as a thrombus. A complete opacification of LAA by DEFINITY echo contrast is supportive of a clear LAA, while a filling defect is an evidence of thrombus. The LAA echodensity seen in this case was likely a reverberation effect from the ridge, and contrast echocardiogram is able to differentiate the cause, avoiding prolonged anticoagulation and procedural delay of LAA occluder implantation.

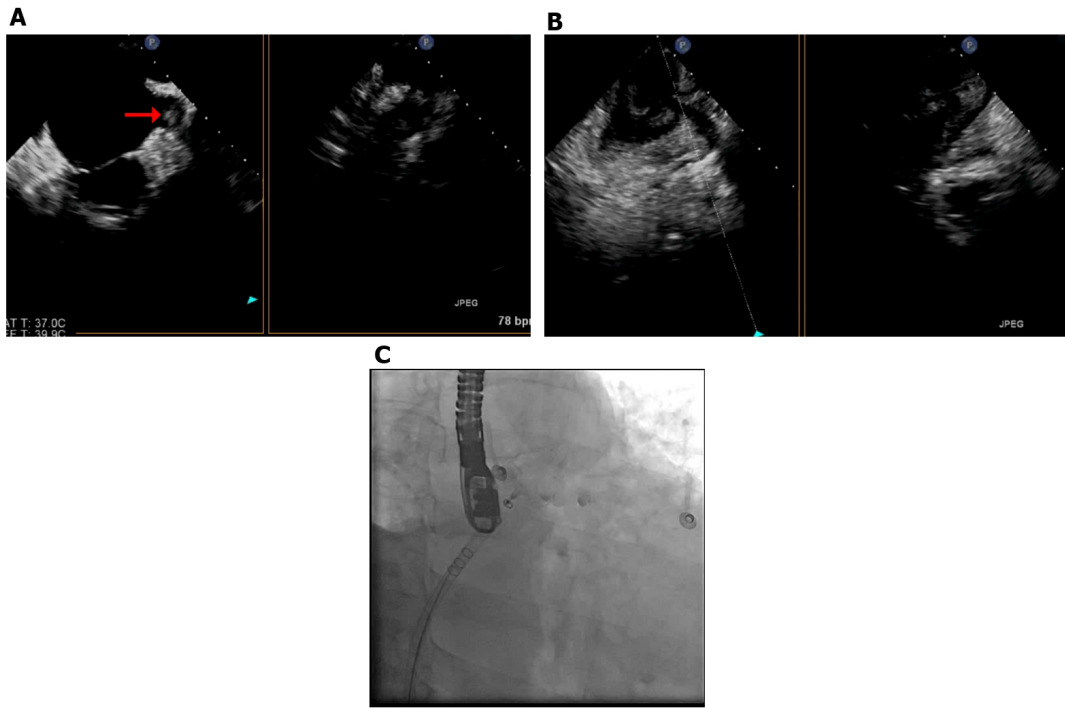


Figure 1.