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First-in-Poland thoracoscopic left atrial appendage closure using Novel AtriClip® PRO-V device in patient with previous heart surgery and LAA thrombus

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The cornerstone treatment for atrial fibrillation (AF) is based on the prevention of cardioembolism and related stroke with the use oral anticoagulants [1, 2], which inherently increase the risk of bleeding. An additional protection from stroke and a valid alternative for patients at high risk of bleeding and/or intolerant of oral anticoagulants corresponds to left atrial appendage (LAA) exclusion/closure. This can be achieved percutaneously or by surgical techniques such as epicardial AtriClip [3, 4].

Forty-five year old male with history of persistent AF and thoracoscopic AF substrate ablation 20 years before; now with tachycardia induced cardiomyopathy (ejection fraction 20%) was admitted to the Department for LAA exclusion; earlier he underwent pulmonary vein isolation ablation in referring center but the procedure was aborted because of LAA thrombus. He underwent thoracoscopic LAA exclusion procedure. Figure 1 illustrates the surgical

approach. In brief, the surgery is performed under general anesthesia, with double lumen tube intubation and selective lung ventilation. Transesophageal echocardiography was performed intraoperatively, LAA thrombus presence was confirmed. Left-sided thoracoscopy was followed by pericardial adhesions removal and LAA mobilization for secure and safe clip placement; device deployment is further assessed in transesophageal echocardiography. Chest tube is left in the thorax for 2 days. Patient was discharged uneventfully on post-op day 4th and referred again for the pulmonary vein isolation procedure.

The current experience is the first in Poland use of the novel thoracoscopic AtriClip® PRO-V (AtriCure, Mason, OH, US) device for the LAA exclusion. This is also the first in Europe use of the PRO-V clip in patient with LAA thrombus. The system differs from the previous generations in a way that there is no frame supporting the clip; therefore, all the maneuvers that could potentially injure the LA roof or pulmonary artery when the frame is retracted are avoided. This is particularly important in re-do cases such as this one, as pericardial adhesions limit the movements and access to the LAA. Left atrial appendage thrombus represents a valid contraindication for the LAAO of any kind and AtriClip® placement is off-label use. For the thrombi located far from the LAA ostium, however, (e.g. body or apex), the risk of thrombus migration is minimal. Indeed, with AtriClip® device, the thrombus is entrapped inside the LAA with minimal to none LAA maneuvers. The results of the ongoing Stand-Alone Left Atrial appendage occlusion for throMboembolism prevention in Nonvalvular Atrial Fibrillation DiseasE Registry (SALAMANDER) [5] will compare the thromboembolic events following LAAO with different devices.

Article information

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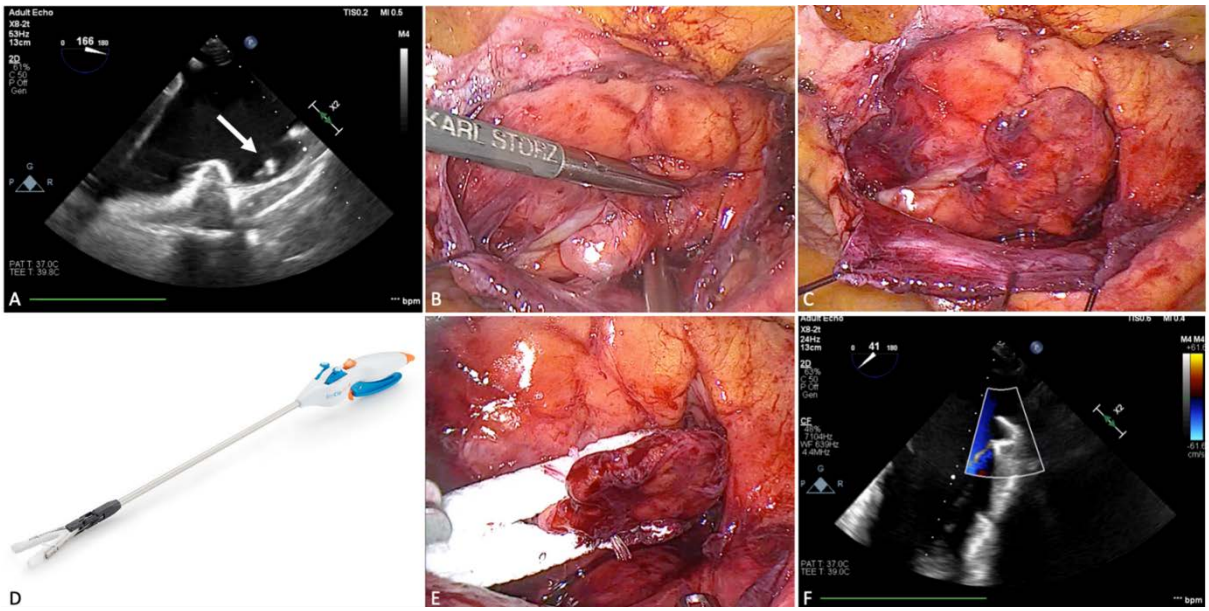

Figure 1. Intra-operative transesophageal echocardiography (**A**) white arrow points to the dense thrombus in the left atrial appendage (LAA); thoracoscopic adhesions removal and LAA visualization; pericardial traction sutures in place (**B**). LAA fully mobilized (**C**). AtriClip® PRO-V thoracoscopic device (**D**). PRO-V clip placement (**E**). Echo shows acceptable closure of the LAA (**F**)