Left atrial appendage invagination during MitraClip implantation

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MitraClip appears to be a promising new approach to mitral regurgitation treatment in select high-surgical-risk patients. A 72-year-old female patient affected by dilated cardiomyopathy and severe symptomatic restrictive mitral regurgitation was remitted by MitraClip implantation. Poor results were observed after the first valve grasp, so a new orientation in the left atrium was tried to improve the left ventricular axial alignment. After a device manoeuvre in the left atrium (apparently arms clip locked position), transoesophageal echocardiogram showed a new thumb-like mass image near the MitraClip device (Figure 1). After a differential diagnostic approach, invagination of the left atrial appendage (LAA) was suggested. Careful push–pull manoeuvres did not resolve the problem. Finally, the partial arms clip opening released the LAA tissue, and the normal anatomy was recovered (see Supplementary material online, Video S1); probably not fully closed the clip had been hooked with LAA tissue during device manoeuvres. No pericardial effusion was observed, and the implantation was performed successfully.

The inversion of LAA is a rare complication after open-heart surgery (not previously reported in percutaneous interventions). It could be corrected with digital manipulation during the surgery. Lack of awareness of this entity can result in a misdiagnosis (thrombus, vegetation?) and diagnosis of unnecessary procedures, even reoperation.

Supplementary material is available at European Heart Journal online.

Figure. A two-chamber view: (A) normal anatomy, MitraClip device (arrow); (B) left atrial appendage invagination noted close to the MitraClip device (hooked tissue); (C–F) evolutive images: the partial arms clip opening released the left atrial appendage tissue, and the normal anatomy was recovered. LAA, left atrial appendage; LA, left atrium; LV, left ventricle; MV, mitral valve.